THE PROSPECT OF MORTGAGE BACKED SECURITIES MARKET IN HONG KONG

by

LO KWOK CHEONG
盧國昌
TANG WAI HING
鄧偉興

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Name: Tang Wai Hing, Alan

Lo Kwok Cheong, Ernest

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Dr. Y.F. Chow

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ABSTRACT

Property market is definitely one of the most pop topic in Hong Kong over the years. It has undoubtedly drawn much attention over the past few years. Traditional Chinese culture emphasises the importance of owning a house or a flat. Besides, many people consider the property market as a nice place for investment, further increasing the demand for real-estates. While many people have invested in housing, very few can really afford a once-off payment for their property investment and most people rely on mortgage loan as the primary source of financing. In fact, mortgage loan makes up nearly 50% of the local banks' loan portfolio. It is estimated that the outstanding mortgage loan amounts to HK$ 420 Billion.

The development of the mortgage backed securities market in Hong Kong will start in mid-1997 with the set-up of a mortgage corporation and other necessary infrastructures by the Hong Kong Monetary Authority (HKMA). HKMA's prime objectives are increasing the flow of investment funds and diversifying mortgage-lending institutions' risk exposure to the property market. Securitization of mortgage loans will bring a new type of financial instrument and it is important to understand its impact on the real-estate market, financial market, banking system, investors and lenders. This project aims at considering and predicting the various effects that the mortgage backed securities project will bring to the domestic market. We will also comment on the HKMA's plan for the development of mortgage backed securities market in Hong Kong.

The project will proceed with an in-depth discussion on the characteristics and operations of mortgage backed securities. A review on the characteristics of Hong Kong mortgage market will be done since this is one of the most important condition which will determine if the mortgage backed securities market can be successfully created. After that, a thorough comparison of Hong Kong with other major countries implementing mortgage backed securities (e.g. USA and Japan) will be carried out. An analysis will then be made to the mortgage backed securities market development plan by the HKMA. To better understand the products' market acceptance, we will conduct a questionnaire survey covering most of the potential key players in the mortgage backed securities market. The objective of the project will be on knowing the response of the public and on giving recommendations for successful development of mortgage backed securities market in Hong Kong.

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CHAPTER I

INTRODUCTION

Securitization and Secondary Mortgage Market

Mortgage-backed security is a financial innovation which becomes popular in the recent decade. In this section, we will take a look at mortgage securitization and the characteristics of various types of mortgage-backed securities, which are essential for further study of the MBS development process.

Securitization

Securitization is the process of issuing marketable securities backed by the expected cash flows from specific financial assets. A financial institution engaging in asset securitization is responsible for structuring and marketing the securities, but the institution's responsibilities for the payments on them are limited. The attractiveness of the securities is to a large extent independent of the credit rating of the origination institution. Investor's assessment usually depends (1) on the capacity of the underlying assets to generate cash flows required for meeting the contractual principal and interest payments, (2) and the degree of protection incorporated in the structure of the security itself.

Securitization allows issuing institutions to engage in long-term lending at fixed rates while avoiding the kind of interest rate mismatches that would occur if a portfolio of long-term assets were funded with shorter-term deposits. Institution transfers the market risks inherent in long-term assets to the investors with these securities. At the same time, investors can acquire an attractive long-term fixed-rate asset without the large operational costs of establishing a retail lending business.

Residential mortgages, credit card receivables, automobile loans and other consumer receivables are mostly often seen for securitization. Usually, these assets are found in large homogeneous pools for which historical data can be used to estimate probable default rates, which is a very important characteristics of securitization. Securities backed or "collateralised" by residential mortgages are called "*mortgage-backed securities*" (MBS). The term "*asset-backed securities*" (ABS) refers to securities backed by any asset except mortgages.

In the process of securitization, a secondary market agency is usually created (by the originator itself or government) for buying the receivables from the originator. The purpose of the agency is to isolate the receivables and the associated cash flows from the originator and perform certain other closely related operations (e.g. restructuring of cash flows, credit enhancement, etc.). Legal agreements on the securities state the rights and obligations of the investors, the originators and other participants in the operation. Credit rating agencies will assign a rating to the agency, taking into account the probability of credit problems and the legal structure of the proposed operation. The agency then issues the securities which are sold to investors.

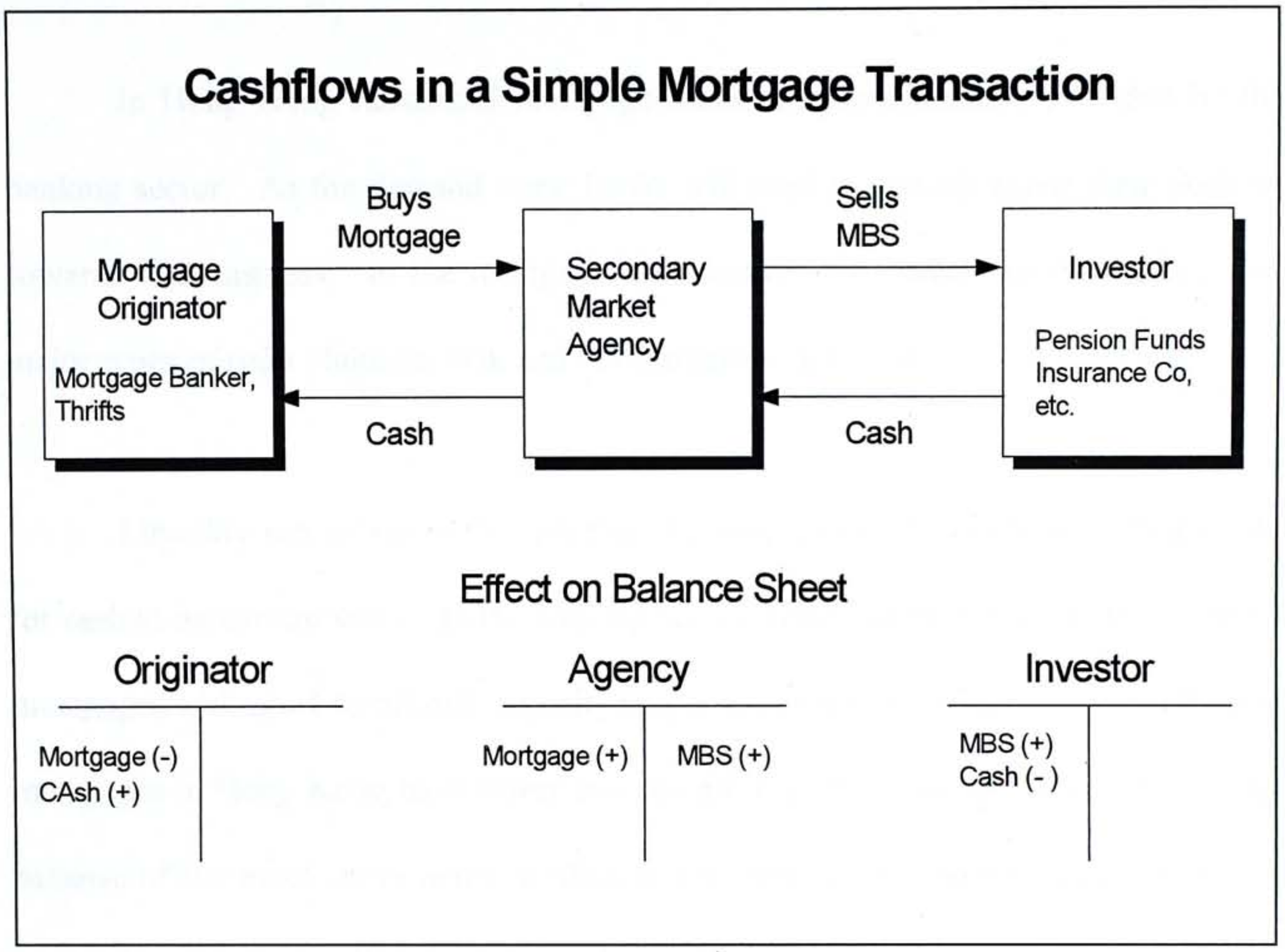
United States used mortgage securitization in the 1970's to promote residential mortgage finance. The success of the mortgage securitization encourage other forms of asset securitization in the 1980's. These securities are now a major instrument in the US capital market. In the 1990's, securitization begins to spread to other countries like United Kingdom, Australia, Canada and other European countries with similar legal and regulatory system as US.

Secondary Mortgage Market

A secondary mortgage market is one which existing mortgages are bought and sold. This is different from the familiar primary market where mortgages are originated. Mortgages are originated by initial lenders such as commercial banks. By definition, the owner of a mortgage that was purchased on the secondary market did not originate the loan. Agencies and firms that purchase mortgages on the secondary market most often raise the funds required for the purchase by issuing bonds or other types of debt instruments. They will pledge the mortgages (now their assets) as collateral for the debt they issue. The debt issue is termed a mortgage-backed security because it is backed up, or collateralised by mortgages. The interest and principal payments on the loan by the mortgagors provide the cash flow needed to pay interest to the holders of MBS and to redeem the MBS when they mature. Mortgage-backed securities, are also bought and sold and are considered part of the secondary mortgage market.

FIGURE 1

CASHFLOWS IN A SIMPLE MORTGAGE TRANSACTION



Source : The Theory and Practice of Real Estate Finance , Clauretie and Webb

Reasons for Mortgage Securitization

In most developed countries, mortgage is still the dominant source of house financing. Mortgage is a pledge of a real estate to secure repayment of housing loan given by the lender to the buyer of the house. The pledge gives the lender the right to foreclose the loan and seize the property if the owner fails to repay the lender. With the Hong Kong's property market boom in 1990s, the mortgage market also undergone a rapid growth. The outstanding mortgage loan up to November 1996 was

HK$ 319 billion. In fact, mortgage loan is the largest debt market in Hong Kong, far exceeding securities and corporate bond market.

In Hong Kong residential mortgage loans are predominantly provided by the banking sector. As the demand rises, banks will need to rethink about their position towards this business. In the mortgage loan market, the banks are exposed to two major types of risks : liquidity risk and concentration risk.

Liquidity risk refers to the risk that the asset cannot be easily and rapidly sold for cash at its current value. In the banking sector, financing long-term (10-15 years) mortgages with short-term bank deposits runs a large maturity mismatch. Even though mortgages in Hong Kong have lower average life than comparable US/UK mortgages because of the much more active trading in property sector, there is little liquidity in mortgages at present. There are two main reasons for why mortgages are not liquid. First, mortgage assets are normally not homogeneous. This is especially true in Hong Kong where there are so many different types of properties and mortgages. The bank portfolio would consist of many different loans with different interest rates, dates of maturity, and loan-to-value ratios. Selling a massive loan with such different characteristics would be very difficult. Second, potential buyers are concerned with the default risk, particularly of conventional loans. International investors had little or no ability to judge the quality of loans that were underwritten by a local bank.

For the concentration risk, residential mortgages loans constituted around 25.7% of total domestic loans. If loans to finance property development and investment are included, property related loans as a whole took a very substantial share of 44.8%.[1] These ratio may well increase along with the long-term rise in the demand for housing loans. Therefore, better ways must be found to enable the banking sector to diversify their business risk towards such high concentration on the property market.

Mortgage securitization can release bank resources for other type of business and reduce the concentration risk exposure to the property sector. It can also reduce the liquidity risk arising from a maturity mismatch between long-term mortgage loans and short-term funds, such as deposits. Besides, it helps to release banking capital to meet the statutory capital adequacy requirement. The secondary mortgage market also enables authorised institutions with comparative advantage in originating or servicing loans to concentrate on those roles and transfer long term assets to long-term funding institutions, such as insurance and pension funds.

There is a fundamental need to source long-term funds for financing home purchases. However, potential suppliers of long-term investors, such as pension funds and insurance companies, are not generally interested in investment in the primary mortgage market. The development of the "secondary mortgage market" could overcome this problem. The following section describes different types of MBS in detail.

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[1] Data from HKMA Monthly Statistical Bulletin (Feb 1997 issue)
Total loan and advances in Hong Kong : HK$ 1635B; loans for purchase of residential properties : HK$ 420B; loans for building construction & property development : HK$ 313B.

Types of Mortgage Backed Securities

There are several major types of mortgage backed securities :

1. Mortgage pass-through securities
2. Mortgage-backed bonds
3. Mortgage pay-through bonds
4. Collateralised mortgage obligations
5. Stripped mortgage backed securities

Mortgage Pass-Through Securities

This is the first popular MBS. Pass-through securities are created when one or more holders of mortgages pools their mortgages together and sell undivided shares or participation certificates in the pool. With a pass-through security, the investor is said to have an undivided interest in the pool of mortgages. The investor has an "ownership" position in the mortgages. What this means is that he will receive the mortgage payments (principal and interest) and any prepayments just as if he were the lender. The originator continues to service the mortgages including collection of payments and "pass through" principal and interest to the securities holders after deduction of servicing fees. The securities holders receive pro-rata shares of the resultant cash flows.

They have relatively high yield, good liquidity and relatively risk-free quality. However, unpredictable prepayments of mortgages makes the timing of cash flows unpredictable. Also, mortgages prepay more quickly when interest rates drop, so that the prepayments must be reinvested at lower market rates. Investors in pass-throughs face the same prepayment risk as mortgage lenders. For these reasons, other forms of mortgage backed securities have been developed to avoid the uncertainty surrounding the timing of cash flows.

Mortgage-Backed Bonds

Mortgage-backed bonds are similar to corporate bonds. They promise semi-annual payments of interest only until maturity. The mortgages are owned by the bond issuer, so that investors have no ownership interest in the mortgages. They are issued primarily by private financial firms and usually backed by conventional residential and commercial mortgages. The maturity on the bonds will be less than that on the mortgages, and the yield will be slightly below that on the mortgages. Credit enhancement is accomplished through over-collateralisation. This means that the face value of the pool of mortgages will be greater than that of the bonds. Mortgage-backed bonds give added security to the investor because of collateralisation, but do not add significant value to the issuer, except for better asset-liability management because of the longer maturity of the bonds and possibly lower interest costs.

Mortgage Pay-Through Bonds

Mortgage pay-through bonds are mortgage backed securities that are a cross between pass-throughs and mortgage-backed securities. As with mortgage-backed bonds, the issuer retains ownership of the pool of mortgages and issues the MPTB as a debt obligation. The issuer will also over-collateralise the debt obligation. Just as with a pass-through, the cash flows to the investors are based on the coupon rate of interest, while principal from amortisation and prepayments is passed through as received from the pool of mortgages. Thus, the investors in these bonds faces the same prepayment risk as those in pass-throughs. Mortgage pay-through bonds are also rated by the agencies based on the same factors associated with mortgage-backed bonds. Because the scheduled amortisation of the mortgages and prepayments is passed through to reduce the principal of the bonds, the extent of over-collateralisation is less than that with mortgage-backed bonds.

Collateralised Mortgage Obligations (CMOs)

Much of the innovations in the MBS market has involved efforts to manage and to price the prepayment risk. A major innovation in mortgage securitization was the development of Collateralised Mortgage Obligations (CMO). CMO go the farthest in rearranging the uncertain cash flows from a pool of mortgages into those desired by investors. The restructuring of the cash flows is the most complicated of all MBS. The objective of CMOs is to rearrange the mortgage cash flows into several different bond-like securities with different maturities to meet the needs of a broad group of investors.

CMO was first introduced in 1983 and gave investors an improved capacity to deal with the prepayment risk of pass-through securities. Investors are grouped into a number of classes with different maturities and receive payments in a predetermined order. The key difference between traditional pass-throughs and CMO is the principal payment process. Unlike pass-through securities, principal payments in CMO are made on a sequential basis with all the principal going to the shortest maturity tranche first until it is retired. After the shortest maturity bonds are retired, all principal payments received will apply to the next tranche in the schedule. This pattern will be repeated until the final CMO tranche is reached. For instance, in a CMO with four "sequential paying" tranches (A, B, C and Z), all payments of principal (including prepayment) are initially directed to the A tranche and successively to the B and C tranches. The Z tranche receives no payment until all earlier tranches are fully repaid. Because the cash flows from the mortgage pool are uncertain, there will be a tranche into which all residual cash flows accrue. This residual tranche will often be "owned" by the issuer of the CMO. Thus, the issuer will have to have an equity interest in the CMO.

The CMO structure enables the investment community to restructure cash flows in intricate ways so as to match the maturity, liquidity and risk preferences of the investors. The A tranche would often have an expected average life of one to three years while the Z tranche would have an expected average life of fifteen to twenty years. The varying repayment profiles allows a variety of investors to choose a maturity position among the tranches. Since CMO redirects cash flows from a pass-through to different bond classes, it redistributes the prepayment risk so as to offer a greater degree of protection against call and reinvestment risk to the longer CMO tranches. Besides, other transformation of cash flows can be made, such as converting monthly receipts into quarterly payments.

Besides sequential pay CMO, other forms of financial innovations have been derived. The derivative products include accrual bonds, floating rate and inverse floating rate bonds, planned amortisation class (PAC) bonds, targeted amortisation class (TAC) bonds and CMO residuals. These innovations enable the securities to have :

(1) a better cash flow stability of over a wider range of pre-payment speeds;

(2) a better matching of floating rate liabilities;

(3) a substantial upside potential in a declining interest rate environment, but a less down-side risk in a rising interest rate environment;

(4) a greater usefulness for hedging mortgage backed products.

With better credit quality, CMOs usually get triple-A ratings by the major commercial rating agencies and are welcomed by most investors.

Stripped Mortgage-backed Securities (SMBS)

Stripped mortgage-backed securities (SMBS) divides the principal and interest generated from the underlying pool of mortgage from a pro-rata basis to an unequal basis. The resulting securities have a price / yield relationship different from the underlying mortgage pool. There are 3 major types of stripped mortgage backed securities :

Synthetic Coupon Pass-throughs

In a synthetic coupon pass-through, there is an unequal distribution of coupon and principal as a result of a synthetic coupon rate different from the underlying collateral.

Interest Only / Principal Only Strips

This is a security where all the interest is allocated to one class (the interest class) while all the principal to the other class (the principal class). The interest class receives no principal payment and the principal class receives no interests. The yields of the two securities are varies asymmetrically with different prepayment rates. For the principal only security, a higher prepayment will increase the yield of the securities. In contrast, the yield of interest class will decrease with higher prepayment. The reason is that as pre-payments are made, the outstanding principal will decline and less dollar interest will be received.

CMO Strips

CMO Strips are tranches within a CMO issue which receive only principal or interest cash flows or having synthetically high coupon rates.

In general, SMBS is highly sensitive to changes in prevailing interest and pre-payment rates and have asymmetrical returns. Investors can take market positions depending on expected movements in prepayment or interest rates. Principal only

SMBS is a bullish instrument which out-performs other instruments in a declining interest rate environment, while interest-only SMBS is a bearish instrument that can be used to hedge against rising interest rates. Other than acting as a hedging tool, SMBS can combine with other fixed-income securities to enhance the total portfolio return in varying interest rate scenarios and tailor-make the investment portfolio to meet the duration of liabilities and minimise the interest rate risk.

CHAPTER II

MBS MARKET EXPERIENCE IN OTHER COUNTRIES[2]

United States

United States has a highly developed money and capital market. Mortgage backed securities was one of the financial innovations originated in the US market. The MBS market in the United States is still the largest in the world. The total amount of mortgage debt outstanding in 1996 amount to US$ 4,860 Billion, of which US$ 1,710 Billion have been securitised (Tables 1 - 5). Thus, a thorough understanding of the development history of United States MBS market can provide useful insights to the development of a similar market in Hong Kong.

[2] The historical information on the MBS development in US, UK and Australia in this chapter was mainly adopted from the book, "Securitization : An International Perspective" by John Thompson.

TABLE 1

MORTGAGE DEBT OUTSTANDING IN US

	1991 - 1996* (US$ Millions)					
	1991	1992	1993	1994	1995	1996*
Total Outstanding	3,962,607	4,091,827	4,266,657	4,472,693	4,715,884	4,859,561
By Type of Mortgage						
1 - 4 Family	2,849,780	3,036,251	3,225,371	3,429,616	4,706,654	3,749,867
Multifamily	284,412	274,234	270,796	275,304	287,935	296,888
Commercial	749,114	700,604	689,296	684,803	707,328	726,308
Farm	79,305	80,738	81,194	82,971	84,620	86,498
By Holder						
Commercial Banks	876,100	894,513	940,444	1,004,280	1,080,373	1,099,554
Savings Institutions	705,367	627,972	598,330	596,199	596,789	606,163
Life Insurance Cos	265,258	246,702	229,061	215,332	211,815	210,499
Federal / Agency	266,146	286,263	327,014	319,327	313,760	314,694
Mortgage Pools / Trusts	1,258,155	1,433,183	1,562,925	1,717,991	1,853,632	1,946,036
Individuals/Others	591,580	603,194	608,884	619,565	650,286	682,615

Source : PSA The Bond Market Trader Association

** Second Quarter Preliminary*

TABLE 2

ISSUANCE OF MORTGAGE BACKED SECURITIES IN US (PASS-THROUGHS)

	1980 - 1996 (US$ Billions)			
	GNMA	FNMA	FHLMC	Total
1980	20.6	-	2.5	23.1
1981	14.3	0.7	3.5	18.5
1982	16.0	14.0	24.2	54.2
1983	50.7	13.3	21.4	85.4
1984	28.1	13.5	20.5	62.1
1985	46.0	23.6	41.5	111.1
1986	101.4	60.6	102.4	264.4
1987	94.9	63.2	75.0	233.1
1988	55.2	54.9	39.8	149.9
1989	57.1	69.8	73.5	200.4
1990	64.4	96.7	73.8	234.9
1991	62.6	112.9	92.5	268.0
1992	81.9	194.0	179.2	455.2
1993	139.0	221.4	208.7	568.1
1994	111.2	130.6	117.1	359.0
1995	72.9	110.5	85.9	269.2
1996	100.9	149.9	119.7	370.5

Source : PSA The Bond Market Trader Association

TABLE 3

OUTSTANDING VOLUME OF AGENCY MORTGAGE BACKED SECURITIES IN US

1980 - 1996 (US$ Billions)				
	GNMA	FNMA	FHLMC	Total
1980	93.9	-	17	110.9
1981	105.8	0.7	19.9	126.4
1982	118.9	14.4	43.0	176.3
1983	159.8	25.1	59.4	244.3
1984	180.0	36.2	73.2	289.4
1985	212.1	55.0	105.0	372.1
1986	262.7	97.2	174.5	534.4
1987	315.8	140.0	216.3	672.1
1988	340.5	178.3	231.1	749.9
1989	369.9	228.2	278.2	876.3
1990	403.6	299.8	321.0	1,024.4
1991	425.3	372.0	363.2	1,160.5
1992	419.3	445.2	409.2	1,273.5
1993	414.0	495.5	440.1	1,349.6
1994	450.9	530.3	460.7	1,441.9
1995	472.3	583.0	515.1	1,570.4
1996	505.0 (e)	650.7	554.3	1,710.0

Source : PSA The Bond Market Trader Association

TABLE 4

ISSUANCE OF AGENCY CMOS IN US

	1987 - 1996 (US$ Billions)			
	GNMA	FNMA	FHLMC	Total
1987	-	0.9	-	0.9
1988	-	11.2	13.0	24.2
1989	-	37.6	39.8	77.3
1990	-	60.9	40.5	101.4
1991	-	101.8	72.0	173.8
1992	-	154.8	131.3	286.1
1993	-	168.0	143.3	311.3
1994	3.1	56.3	73.1	132.6
1995	1.9	8.2	15.4	25.4
1996	9.5 (e)	26.7 (e)	34.1	70.3

Source : PSA The Bond Market Trader Association

TABLE 5

OUTSTANDING VOLUME OF AGENCY CMOS IN US

1987 - 1996:Q3 (US$ Billions)			
	FNMA	FHLMC	Total
1987	0.9	n.a.	0.9
1988	11.6	10.9	22.5
1989	47.6	47.6	95.2
1990	104.3	83.4	187.7
1991	193.3	143.0	336.3
1992	276.9	217.0	494.0
1993	323.4	264.1	587.5
1994	315.0	263.7	578.7
1995	294.0	247.0	541.0
1996	274.8	235.4	510.2

Source : PSA The Bond Market Trader Association

Rise of Securitization in US Market

Securitization has emerged as a distinctive feature of the financial system in the United States over the past two decades. Several factors have encouraged the growth of securitization. The historical separation between banking system and capital market created two channels for financial intermediation. The US system can be contrasted with other countries which the banks dominate most aspects of financial intermediation, even when financial innovations were introduced. Different classes of US financial institutions (banks, thrift institutions, securities houses, institutional investors) compete among themselves in devising innovative financial products. The process of bank disintermediation (i.e. replacement of on-balance sheet financing by depository institutions with off-balance-sheet financing in securities market), has probably progressed further in the United States than in any other country. This phenomenon is particularly obvious in mortgage finance. Over the past decades, on-balance sheet housing financing by banks has been losing importance relative to the capital market. This can be clearly seen in Table 2 and 3 which show the historical trends of residential mortgage finance in the United States. As the banking industry contracted, the emergency of strong demand from institutional investors provided an important alternative channel for housing finance.

Many trends in the banking industries encouraged mortgage securitization. The tradition of fixed-rate mortgages and the resulting risk of large asset / liability mismatches encouraged banks to use securitization. The incentive to securitise became particularly powerful when interest-rate volatility increased after 1970. With growing emphasis in the banking industry on the efficient use of capital and the control of risk, many US banks are seeking to de-emphasise lending as a source of revenue and instead wish to focus on services that generate fee income. Similarly, depository institutions can generate increased earnings from any given level of capital through securitization and mortgage sales is obviously a cost-efficient way of achieving this objective.

A marked institutionalisation of wealth has been occurring in the Untied States, with funds accumulating in the hands of institutional investors such as mutual funds, insurance companies and pension funds. This large and diverse community of institutional investors has a rising demand for securities with different liquidity, risk and maturity characteristics. In response to this growing demand by investors for assets with attractive risk / return characteristics, investment banks have sought to create instruments specifically tailored to the requirements of particular investors. This has encouraged intermediaries to structure securities with risk tranches differentiate by credit risk, liquidity and maturity that closely match investor preferences. Furthermore, since US institutional investors are accustomed to doing intensive risk analysis, they have not been intimidated by the complexity of some of the structures involved.

Support from and innovations of Federal agencies were important in the early development of the market for MBS. With the large number of geographically dispersed banks, official support eased flows of resources among regions and reduced geographic risk concentrations at financial institutions. With a large number of originating institutions and disparate systems of documentation at the outset, the mortgage securitization process itself encouraged standardisation in underwriting of systems to monitor payments. Standardisation occurred not because the official regulators imposed such conditions. Originators sought to make mortgages conform to standards set by securitization agencies in order to improve liquidity. The extension of direct and indirect Federal support (to the securities issued by the agencies) reduced uncertainties while agencies were developing a range of benchmark securities and while the market was developing pricing models for such securities.

MBS Market Development in United States

The largest category of securitization-related assets consisted of mortgage-backed securities. In US the great majority of mortgage-backed securities are issued and guaranteed by a government-sponsored agencies. The outstanding volume of these securities exceeds US$1.71 trillion, making this the second largest category of bonds in the United States after the Treasury Bonds. These securities fall into the broad category of "government agency papers" - a category of assets fairly close to Treasury securities in terms of credit risk , but with somewhat higher yields.

Mortgages securitised by any of these agencies must meet strict credit quality standards and cannot exceed specified amounts. The mortgages are assembled into a "pool" which produces an identifiable cash flow as the backing for marketable "pass through" securities having various maturities and coupon rates. Usually, the originating institution continues as "servicer" of the underlying loans. More than half of the residential mortgages in the United States are securitised.

The process of mortgage securitization began in 1970's when the Government National Mortgage Association (GNMA or "Ginnie Mae"), the Federal Home Loan Mortgage Corporation (FHLMC or "Freddie Mac"), agencies of the Federal Government, commenced programmes to securitise residential mortgages originated by banks, thrifts or mortgage companies. A third federal agency, the Federal National Mortgage Association (FNMA or "Fannie Mae") also began securitising mortgages in the 1980's. In the cases of banks and thrifts, institutions which hold mortgages on balance sheet, the securitised assets are removed from the balance sheet. Federal agencies also securitise mortgages originated by mortgage companies, institutions which engage exclusively in off-balance sheet securitization, and which now account for a considerable share of the total mortgage market. The legal status and the operating techniques of the three main Federal agencies involved in housing finance are somewhat different.

The GNMA was set up in 1968 and is an agency within the Federal Government. The agency securitises only mortgages insured by the Federal Housing Administration or guaranteed by the Veterans Administration. Focus is placed on the housing programs for low income groups. It does not buy loans directly but swaps securities for loans from the originator, and guarantees the resulting pass-through security for an annual fee of 6 basis-points. GNMA received legislative authorisation to issue its own CMOs in 1994. Credit enhancement on the pass-throughs come from two sources. First, the underlying loans are guaranteed against default by the FHA and the VA. Second, GNMA guarantees the timely payment of interest and principal.

The other two agencies, FNMA and FHLMC, which have only indirect ties to the Federal Government, purchase loans for their portfolio directly from lenders. Both agencies supports the secondary mortgage market by issuing MBS and purchasing mortgages. Credit enhancement comes from its ability to borrow from the US Treasury, and its equity results from the sale of stock and direct corporate bonds. FHLMC funds itself partly with direct corporate bonds and also partly by issuing pass-though securities. In addition to purchasing loans, both agencies swap MBS for loans. The swapping lender funds the loans by selling the MBS and pays the agencies a guarantee fee of 20 - 25 basis points. FNMA and FHLMC used to purchase or securitise primarily "conventional" loans, i.e. loans without Federal Housing Administration insurance or Veterans Administration guarantees. Nowadays, both have broaden their business to purchase FHA and VA loans.

Besides the three Federal Government agencies, other private corporations can also issue non-agency mortgage backed securities. The first non-agency MBS was introduced by Bank of America in 1977. The originators of these "private label MBS" include banks, thrifts and home builders. With MBS being issued without strong Federal support, the problem of analysis and management of credit risk became more serious. It must be noted that the purchase of a MBS has very limited recourse to the mortgage originator and hence it is important to ensure that

(i) the receivables are sufficient to generate the payment stipulated in the security

(ii) safe-guards are provided in case of short-fall in revenues

(iii) the investor has a sufficiently clear legal claim on income from the receivables, with adequate protection in the case of delinquency.

In order to assess and reduce the credit risk, two major techniques were developed that have now been used not only in the US market, but the entire international MBS market. The two techniques are (1) the use of credit enhancement and (2) the enhancement role of rating agencies.

With credit risk a serious consideration in all MBS that do not carry Federal Government support, the rating agencies must examine each deal in detail to determine whether the mortgage and the MBS structure are adequate to justify a particular credit rating. It is now generally expected that all MBS will carry ratings from at least two rating agencies prior to issue.

Regarding credit enhancement of MBS, some of the popular choices include :

(1) Third party enhancement

An external party, usually an insurance company or a bank, provides a guarantee. A number of specialised companies, called "monoline insurers" have emerged as a result. The function of these companies is to offer credit enhancement for fees. The guarantee can be up to 100% of payment or some lesser amount.

(2) Subordination

An alternative means of obtaining credit enhancement is to create a "senior / subordinated" structure, in which that senior tranche creditors have a priority claim of the pass-through payments over subordinated tranche creditors.

(3) Overcollateralisation

The value of the mortgage pool is greater than is needed to support the contractual payments, so that the investor is protected in the event of a potential shortfall in expected payments. The excess collateral is usually held in a subordinated tranche or a special account.

(4) Cash collateral account

A cash deposit can be held in a special account which allows for payments in case of a shortfall of payment from the receivables A slight variation is a "spread account" which represents the difference between the margin received by the originator and that of the investor. The MBS originator will receive payment from the spread account only of other creditors are paid in full

Over the long-term development of the MBS market, changes in the relative importance of the various forms of credit enhancement is observed. In general, with the down-grading of many US banks and insurance companies, third party guarantees have declined in importance, even though the "monoline" insurers have all retained their credit ratings and remain a significant force in the market. Overall, senior / subordinated structure over-collateralisation or reserve funds are becoming the most widely used forms of credit enhancement.

Besides, Federal Government requires these non-agency MBS to be registered with the Securities and Exchange Commission. Mortgage pass-through securities are quoted and traded in the same way as Treasury securities. The large secondary market for MBS are the New York Stock Exchange and the American Exchange. The availability of an active secondary market enables the establishment of a mature MBS market in the US.

Key Success Factors for MBS Development in US

In summary, several factors have encouraged the growth of mortgage securitization in the United States :

(1) Support from Federal Government to the early development of MBS

(2) Large number of geographically dispersed banks give rise to a need for mechanisms to ease flows of resources among regions and reduce geographical risk concentration.

(3) The tradition of fixed-rate mortgages and the resulting risk of large asset / liability mismatches favoured securitization.

(4) The separation between the banking and securities giving rise to alternative channels for financial intermediation

(5) The decline of savings & loan sector and the rise share of capital market in intermediation

(6) The presence of a sophisticated community of institutional investors

(7) The diminishing availability of low-cost deposits for mortgage funding

(8) The strain on the banks to improve capital / asset ratio in the 1980s

United Kingdom

The United Kingdom represents the largest market in securitised assets outside the United States, with MBS accounting for 80% of all securitised assets. However, MBS issuance reached its peak in 1988, and the peak of outstanding occurred in 1989. The pace of issuance accelerated in 1993 from 1992's very low levels, but still remained well below the volumes of 1988 - 1991 (See Table 6). Thus, securitization remains of only margin significance for the financial system as a whole, with neither MBS or ABS sector showing great dynamism in the past few years. Even though the British legal and regulatory infrastructure does not present any obvious barrier to the expansion of securitization, the major explanation of the low level of activity is weak demand on the part of market participants. There has been no programme comparable to that in the United States to provide official guarantees for mortgages. The main potential originators (banks and building societies) have adequate capital. Moreover, as a result of sluggish real economic activity in the past few years, loan growth has been slack and the slump in the property market has made MBS issuance more difficult. Nevertheless. in expectation of some pickup in activity and a change in funding conditions, financial intermediaries continue to undertake a moderate amount of securitization -- including some innovative operations -- in order to be able to use the technique more widely if the situation changes.

TABLE 6

ISSUANCE OF MORTGAGE-BACKED SECURITIES IN UNITED KINGDOM

1985 - 1994 (£ Billions)				
	Residential Mortgages (first)	Residential Mortgages (second)	Commercial Mortgages	Total
1985	50	-	-	50
1986	-	-	-	-
1987	1,000	-	-	1,000
1988	3,301	-	-	3,301
1989	2,427	-	-	2,427
1990	2,246	-	-	2,246
1991	2,759	-	-	2,759
1992	298	170	-	
1993	913	92	135	1,140
1994	2,563	-	333	2,896

Source : "Securitization: An international perspective", John K Thompson, Organisation for Economic Co-operation and Development

MBS Market Development in UK

The British residential mortgage market is huge, with an estimated £ 411 Billion outstanding in January 1997. It was an explicit policy of the government in the 1980s to encourage widespread home ownership. Although the authorities have never undertaken an official programme to guarantee mortgages as in the United States, there has been a trend since the 1960s for owner-occupied housing to account for a rising share of the housing stock. The main traditional providers of mortgage finance have been the building societies (mutual savings banks), which engage in on-balance-sheet lending and depend mainly on retail deposits (historically, a low-cost source of funding). The building societies supplied nearly all housing finance in the regulated environment that prevailed though the late 1970s. With restrictions in bank credit expansion, the building societies faced excess demand for mortgages and set both deposit and lending rates on the basis of a cartel-like arrangement. Building societies which have mutual status have been keen to acquire mortgage books, but have remained reluctant to sell mortgage securities to third parties. Because of the relative health of the sector, there was no need to securitise mortgage loans.

In the mid-1980s, the British mortgage and property markets boomed, resulting in a rapid increase in the volume of outstanding mortgage credit. The financial market was deregulated. Banks were freed from credit restrictions and building societies were allowed to compete with banks in offering a number of financial services. By 1982, banks were doing some 36% of all new residential mortgage lending. At first, there was some net decline in savings deposit in the building societies, forcing them to borrow on a large scale in the money and capital markets. Nevertheless, as interest rate rose in the later 1980s, retail savings reflowed into the building societies. The building societies were able to borrow on favorable terms in the money and capital markets. At the same time, the building societies face regulatory ceiling which limit wholesale funding to 40% of liabilities. Although the commercial banks gained in market share in the 1980s, the building societies still accounted for almost two-thirds of total mortgage lending in 1993. In addition to these institutions which engaged in on-balance sheet mortgage lending, in 1985 - 86 *special mortgage lenders* (SMLs) were formed; these rely primarily on off-balance sheet securitization as a funding technique. By 1994, the SMLs accounted for some 6% of mortgage lending.

Mortgages in UK normally have maturities of about 25 years at variable rates. Rates are usually reset at 6-month intervals. The lender is not obliged to align the lending rate with market rates, but tends to do so, since the borrower has the prepayment option with only a small fee. Recently, there has been a trend toward mortgages that are fixed for relatively long periods. Many mortgages have recently had rates fixed for as long as 10 years, but fixed rate mortgages of up to 25 years are available. Although more than half of the new mortgages in 1993 were at fixed rates, the figure for outstanding mortgages was less than 10%. In the past, most mortgages were annuity mortgages in which principal and interest are repaid over the life of the loan, with the share of principal rising over time. At 1994, only about one-fifth of mortgages are in annuity form. The endowment mortgages now accounts for about four-fifths of the total. Under this system, the borrower takes out an endowment insurance policy at the beginning of the loan, which is assigned to the mortgagee who receives the principal at maturity of the policy or upon the death of the borrower.

As mentioned above, the SMLs specialise in mortgage origination and servicing, with mortgage securitization as funding technique. In an effort to introduce securitization technique developed in the United States, three non-bank-affiliated SMLS were formed, one of which was a subsidiary of Salomon Brothers; several SMLs were also established as subsidiaries of British of foreign banks. Mortgage loans are sold to a special purpose vehicle which issues securities, most commonly sterling floating rate notes (FRNs). Coupons are typically set quarterly at a stipulated spread over LIBOR. As in other MBS markets, interest and principal (including prepayments) are passed through to investors. Some innovative MBS issues have been made in the United Kingdom. Similarly, some securities with multiple-tranche sequential pay have been issued, emulating some of the cash flow restructuring that are used in the MBS market in the United States. By the end of March 1992, total issues by SMLs amounted to £ 11.2 Billion, which represented more than 90% of total MBS issues and 3% of total mortgages outstanding.

Credit Enhancement and Credit Rating

In keeping with standard MBS market practice, these securities are given credit enhancement and are rated by rating agencies. Initially, credit enhancement took the form of guarantee from insurance companies or bank letters of credit. However, as the rating of banks and insurance companies have been lowered, this method left the securities vulnerable to downgrading as well. Consequently, while two-thirds of all MBS were still enhanced by insurance companies at the end of 1993, other techniques, especially subordination, were increasingly used for enhancement. Thus far, nearly all MBS have been rated AAA or AA.

Legal and Regulatory Framework

The legal and regulatory framework in the United Kingdom does not present a significant barrier to the expansion of securitization. The authorities did not make explicit policies to facilitate the advance of securitization, but have generally made rules enabling the practice to proceed where market demand proved strong enough to support an expansion.

The Securities and Investment Board, which is responsible for the regulation of investment business, has been willing to approve ABS and MBS offerings. The regulation of banks is undertaken by the Bank of England, while the Building Societies Commission assumes a similar role for the building societies. In 1989, the Department of the Environment issued voluntary guidelines aimed at protecting borrowers in cases the loan is transferred, since that time borrower protection measures have not been an obstacle to securitization. Both the Bank of England and the Building Society Commission have been willing to accord off-balance sheet treatment to MBS, but have required that all risk inherent in underlying assets be removed in order to obtain off-balance sheet treatment. The greatest uncertainty concerning regulatory questions in the recent past has involved the risk weighting assigned to MBS. For a time in 1991 - 92, the authorities ruled that, in line with the capital adequacy guidelines of the Commission of the European Communities, MBS carried on-balance-sheets by banks and building societies would command a 100% capital charge rather than the previous required 50%. Subsequently, however, the 50% risk weighting was restored. Currently, the Commission allows the application of a 50% weighting to all commercial and residential mortgage credit or mortgage backed securities.

Future Development

Although the MBS market in the United Kingdom is the largest market in securitised assets outside the United States, it has not expanded as rapidly as predicted by some observers in the late 1980s. Following a sharp rise in new issues that accompanied the established of SMLs in 1985 - 86, outstandings reached a peak of about £3.5 Billion in 1988 and have leveled off in subsequent years. The lack of further expansion can be attributed mostly to lack of demand, on the part of both issuers and investors. From the issuer side, the great majority of MBS issues were made by SMLs. Banks and building societies only used mortgage securitization to a very limited degree. Until now, the banks and the building societies have no strong incentive to securitise since they are adequately capitalised and usually had access to cheap sources of funding. Consequently, only about 3% of total mortgages in the United Kingdom were securitised. Concerning investors, nearly half of UK-originated MBS are purchased by banks and, to a lesser degree, building societies. A number have also been acquired by foreign banks. Many pension funds are seeking longer-term fixed-rate assets to match their pension liabilities, and do not prefer floating rate instruments. Likewise, purchases by insurance companies have been modest.

The down-turn in the UK housing market significantly affect the MBS market. The decline in the value of the collateral has required further credit enhancement, make securitization increasing expensive. The downgrading of banks and insurance companies triggered downgrading of MBS which they had offered third-party guarantees. Thus, whereas 93% of ABS and MBS issued by UK residents were originally rated AAA, by February 1994 some 46% of issues were rated AA. There were also some special problems in the SML sector. The competitive lending rates on building societies and bank mortgage operations (due to cheap retail funding) meant that SMLs tended to operate at the risky fringe of the market on high loan-to-value ratios. Consequently, the fall in house prices and the rise in unemployment hit the SMLs disproportionately. Having withdrawn from the market for two to three years, some SMLs have recently resumed originations. Some MBS were issued with AA rather than AAA rating. Another factor discouraging activity is that a major SML has experienced well-publicised financial difficulties with led to higher risk premiums on MBS, while the other SMLS have also fallen on hard times due to the contraction in business. Taken together, these developments have led some market participants to look upon MBS market as risk-prone. Many institutions would no longer purchase subordinated tranches. All of these factors have increased the cost of securitization, which had never attained a clear cost advantage over more traditional funding techniques. A number of institutions which had been active in the market in the mid to late 1980s have now withdrawn.

The development of the MBS market in the United Kingdom was hindered by the decline in residential market since early 1990's. The decline in the property market has harmed the MBS market in several ways. The rate of mortgage origination has declined considerably. As shown in Table 7, net mortgage originations declined since 1990. The low turn-over in the housing market limited the issuance of MBS. Some agencies have responded to this pressure by purchasing SMLs which has previously been active MBS issuers, thus expanding both their mortgage portfolio and distribution capacity.

TABLE 7

UNITED KINGDOM NET MORTGAGE ADVANCES AND RESIDENTIAL PROPERTY TRANSACTIONS: 1988-1995

	Net Advances (£)	Transactions
1988	£ 23,677 M	1,990,000
1989	£ 24,041 M	1,467,000
1990	£ 24,090 M	1,283,000
1991	£ 20,585 M	1,225,000
1992	£ 13,448 M	1,032,000
1993	£ 9,425 M	1,114,000
1994	£ 11,083 M	1,168,000
1995	£ 8,296 M	-

Source : Mortgage Banking (May 1996)

The recent increase in the amount of fixed-rate mortgages may stimulate originators incentive to use securitization in order to avoid maturity mismatches. Moreover, the building societies face regulatory limits on the use of wholesale funding. In recent times, retail deposits have became a relatively expensive means of financing comparing to both wholesale funding and securitization. Yet, the overall economic down turn seems to the dominant market factor and we have only limited MBS issue in 1996. Substantial growth of the UK MBS market is likely to be limited until further increase in loan origination upon improvement of the general economic condition

Australia

MBS Market Development in Australia

The Australian MBS market has been encouraged by government's official programmes to support housing. Unlike the United States where central government has been active in promoting the market, the state government took the lead in Australia MBS market. Due to constraints on state government borrowing in the 1980s, it became increasingly difficult for states to sustain public funding of low-cost housing. However, Australian government made it possible for low income households to obtain housing finance from certain intermediaries, which were financed through a securitization programme. A moderately large amount of residential mortgage securitization was seen in Australia. Close to A$3 Billion of MBS was issued in 1995. Add this to the outstanding A$7 Billion that had been issued up to 1994, and the Australian market appears quite developed.

The securitization programme began in Australia in 1985, with the issue of promissory notes by the National Mortgage Market Corporation (NMMC), established in 1984 by the Victorian government. In late 1986 the First Australian National Mortgage Acceptance Corporation (FANMAC) was formed by the state government of New South Wales. It was the first to issue investment grade, term securities. Each of these organisations has state government as part owners, in conjunction with private sector shareholders. By June 1994, 12 organisations were involved in mortgage securitization programmes (generally through trust structures).

In 1995, the two government-related issuers, FANMAC and NMMC, accounted for 32% and 34%, respectively, of outstanding MBS. These issuers obtain pools of mortgages originated by financial institutions under government housing schemes. Originating institutions often retain no liability for defaults, and credit and liquidity support is provided by the governments involved.

Securitization has only had a marginal impact on the market for mortgage finance. In 1994, there are A$ 135 Billion of residential mortgages outstanding through intermediaries but only A$6 Billion were in securitised form. The main institutions in the primary mortgage market are the commercial banks, which tend to keep mortgages on their balance sheet. Until recently, involvement by financial institutions as originators of MBS has been limited to a few building societies, credit unions and co-operative housing societies. Most mortgages in Australia are variable rate and have maturities of 20 - 30 years. The interest rate can be changed periodically at the discretion of the lending institution as market rates changes.. However, in recent years a small market has developed in housing loans with rates capped or fixed for an initial period (sometimes up to 10 years). Typically, fixed rate mortgage prepayment carries an interest penalty, generally of one month's interest for each year of the fixed-term remaining. The loans underlying FANMAC and NMMC programmes typically have carried interest rates fixed for long periods or indexed to the rate of inflation, and in the past have had no prepayment penalty.

Credit Enhancement

Since there is no direct central government programme to guarantee mortgages, credit risk can be a significant consideration (although, as noted above, some schemes have state government support). Credit enhancement have taken the form of insurance of individual mortgages, pools insurance, lines of credit, over-collateralisation, and senior / subordinated bond structures. Most early Australian programs - including FANMAC, Keystart Bonds, Victorial Housing Bonds and SAFE - protect MBS investors against credit losses by using state government support or another guarantee to establish unlimited amount of credit support. However, recent transactions have had limits on credit enhancement, with subordinated bonds providing the credit support. In general, the credit rating of Australian MBS is high with around half-rated AAA, and all at least investment grade.

The spreads of MBS over benchmarks vary significantly. MBS trade at a spread over government bonds of similar maturity. Quoted yields on 3-year MBS in 1994 ranged from 65 to 90 or more basis points over Commonwealth Government Securities (CGS). The premiums in these spreads reflect credit risk, prepayment risk, and lesser liquidity. Market participants reported that trading in MBS is rather subdued. (As a comparison, spreads on 3-year New South Wales Treasury Corporation Bonds over CGS were around 20 basis points.)

Initially, FANMAC's issues were single tranche pass-through securities, but more recently several issues have used a multi-tranche approach using collateralised mortgage obligation techniques. Floating rate coupons pass-through securities, straight mortgage bonds with bullet payments, inflation-indexed bond and short term commercial paper instruments have also been used by various issuers. Most MBS issues have used a trust structure. Recently, NMMC launched a substantial programme of variable rate bonds.

Legal and Regulatory Framework

The expansion of the Australian MBS market was aided by important legal and regulatory changes. State stamp taxes were lifted and restraints that would have prevented state-based building societies and credit unions from selling assets were removed. The Australian Government's Housing Loan Insurance Corporation (HLIC) were permitted to insure pools of mortgages, rather than individual mortgages. Regulations covering certain categories of institutional investors were modified to permit investments in MBS. The establishment of rating agencies and the alignment of Australian ratings with those in other markets have made it easier to market securities with complex structures.

There are no explicit legal obstacles to the further growth of the market. However, changes in 1992 to the Corporation Law have made access to the non-professional market difficult. Securitised programmes intended for the non-professional market have to comply with onerous reporting provisions under sections of the law which cover debentures and prescribed interests (e.g. trusts).

Future Development

Despite the recent strong growth in MBS volume, prospects for further expansion of the MBS market are mixed. Concerns remain about the effect of intense competition in residential mortgage lending on the credit quality of mortgage collateral in new securitisations. Industry observers expect the increased volumes of lending experienced by mortgage managers in 1995 to continue, despite a recent slowdown in new housing activities.

As competition among lenders intensifies, loan quality may start to deteriorate, because lenders will fight to maintain their market share and profit margins. There already are signs of loosening credit standards for home loan approvals, and some lenders are originating mortgages with increasingly high loan-to-value ratio.

Other emerging credit issues also warrant close scrutiny by investors as new issuers enter the market. Such issues include the impact of equitable assignments to the security package of the structure; rights of set-off that exist in the insolvency of a deposit-taking institution that sells the mortgage loans; and certain cash flow payment mismatches.

Until recently, the major Australian banks have not been active in the securitization market. From the side of banks, incentives to securitise are small. The practice of granting variable-rate mortgages has prevented the emergency of large funding mismatches while the nation-wide presence of major banks has reduced geographical concentrations. The high spread between mortgage rates and other interest rates has meant that mortgages have very attractive rates of return. The high costs of creating MBS (credit enhancements, liquidity facilities, etc.) would mean an erosion in the current high profitability of this business. Past experience in problems with the housing scheme underlying FANMAC bonds (which have had the effect of accelerating payments) has also slowed growth of the market. On the other hand, given the returns on these assets, the investors community in time may be willing to absorb an increased volume of offerings.

It is expected that there will be further growth in the Australian MBS market. Volumes could grow even further if the major and regional banks decided to enter the market. Besides, the growth in Australian MBS issuance and pricing competition among issuers will likely lead to the development of more complex securities. Tranches may be structured to more closely match investors' specifications with the effect of widening the investor base for Australian MBS. The increasing volume of Australian MBS offered off-shore will also increase the investor base.

CHAPTER III

MORTGAGE MARKET IN HONG KONG

In Chapter II, we discussed the situation and characteristics of mortgage market in major countries, which serve as a guideline and reference when analysing the case for Hong Kong. In this Chapter, we will scrutinise the situation for Hong Kong, in particular, we will try to link various factors to the mortgage corporation proposal in Hong Kong.

Primary Mortgage Market condition in Hong Kong

The demand for housing increases as the economic conditions of the colony improves. During the period 1980-1995, the demand of residential mortgage loans rises from HK$11.7 billion to HK$347.9 billion, which, as a percentage of Hong Kong's gross domestic product rose by 8.3% to 31.3% (Ref. Table 8). Projection in the year 2000 to 2005 forecast that demand will be HK$837.1 billion to HK$1970.8 billion. The mortgage loans will be as high as 50% of the GDP by the year 2005.

TABLE 8

DEMAND OF RESIDENTIAL MORTGAGE LOAN AS A PERCENTAGE OF GDP OVER THE YEARS

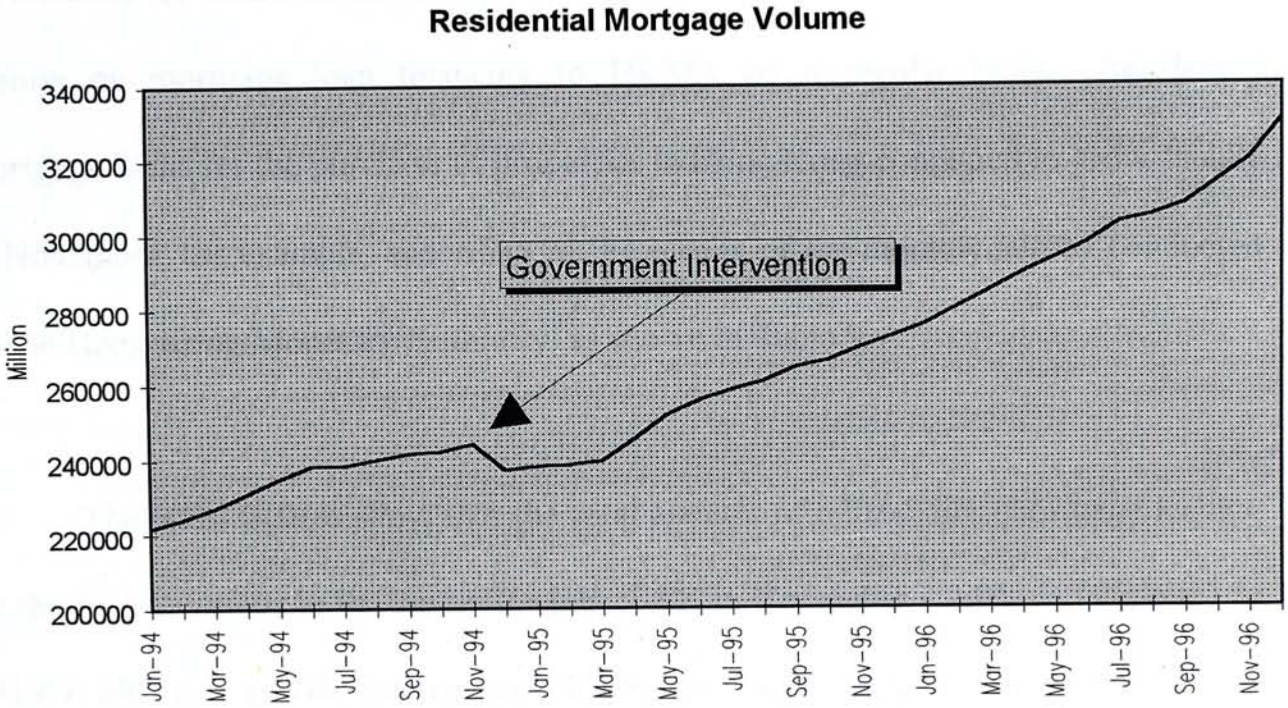
End of Year	Demand for residential mortgage loans	As a % of GDP
1980	11.7	8.3
1985	37.2	13.7
1990	145.8	25
1995	347.9	31.3
Projection		
2000	837.1	40.0
2005	1970.8	50.0

Source : Hong Kong Monetary Authority

Although the Government is increasing the payment for the first instalment of a mortgage loan to 30%, it does not seem to have an effective way to suppress the rising of property price. This can be studied with the help of the following trend showing the volume of outstanding mortgage loans in Hong Kong over the past years :

FIGURE II

VOLUME OF RESIDENTIAL MORTGAGE LENDING IN HONG KONG FROM 1994 TO 1996



Data Source : HKMA Residential Mortgage Survey

As seen, the volume jumped from HK$ 220,000M to about HK$ 330,000M over the past two years, equivalent to an annual increase of HK$ 55,000M. Various reasons contribute to such a surge in mortgage volume. The most important ones include speculative sentiment, rising property prices and the increasing demand for domestic housing.

Latest Residential Mortgage Conditions

HKMA closely monitors the residential mortgage market through close surveillance of financial institution. Authorised institutions are required to submit reports on mortgage loan financing to HKMA on a regular basis. Residential mortgage loans for the purchase of properties in Hong Kong continued to grow rapidly in November, for example, according to the results of the monthly survey conducted by the Hong Kong Monetary Authority, as shown in Table 9.

The latest figures show that the total amount of outstanding mortgage lending by the 33 institutions in the survey rose by 1.8% in November (2.0% in October) to $319.9 billion. (The percentage change has been adjusted to allow for the reclassification of loans by an institution amounting to $0.4 billion during the month). The growth rate is higher than the monthly average of 1.5% over the last twelve months.

New loans approved during the month is the highest since the survey was first conducted in December 1992. However, the effect of this was offset by a corresponding increase in the amount of repayments which rose by 18.2% to $11.2 billion in November. These figures reflect the refinancing of existing mortgages as well as demand for new mortgages arising from the continued buoyant residential property market in October.

The annualised rate of growth in lending over the last three months increased to 20.1% from 14.7% in the three-month period to October. The twelve-month average of outstanding loans showed an annualised growth rate of 17.6%, compared with 17.0% in October.

The increase in lending in November follows the sharp upward movement in October. Prior to then the growth in lending had been on a declining trend for some months. At the same time, property prices, particularly those at the upper end of the market, have risen sharply in recent weeks and there are signs of renewed speculative activity. In this environment, the HKMA has urged institutions to exercise additional care in relation to their property exposure. They should look critically at their lending criteria, particularly in relation to the more expensive properties where the speculation has been most evident. As an overall policy, institutions should adhere strictly to the 70% loan to value ratio in respect of their own lending exposure and should avoid arrangements which circumvent this ratio. A lower ratio than 70% will normally be appropriate for more expensive properties, and the valuation of such properties should be carefully examined. Institutions should also have regard to the debt-servicing ratio of the borrower and whether the property in question is to be owner-occupied or is being acquired for investment purposes.

The amount of new loans approved but not yet drawn further increased over the already high base by $2.3 billion (20.2%) to $13.8 billion in November. These figures, coupled with the increased activity in both the primary and secondary markets in November, suggest that residential mortgage loans are likely to continue to grow at a rapid rate in December.

The amount of residential mortgage loans associated with co-financing schemes accounted for 3.8% of total mortgage lending of the 33 surveyed institutions at end-November. Of the $20.8 billion new loans approved during November, about 83.5% were accounted for by properties aged 15 years or below.

Lending for the purchase of properties in China increased by 1.1% to $6.0 billion in November. Gross loans made in November decreased both in number (to 178 from 348) and in amount (to $161 million from $216 million). New loans approved in November also decreased both in number (to 246 from 319) and in amount (to $273 million from $286 million).

TABLE 9

RESULT OF THE NOVEMBER 1996 SURVEY ON RESIDENTIAL MORTGAGE LOANS IN HONG KONG

	Nov 1996 HK$ Mn	Oct 1996 HK$ Mn
33 authorised institutions		
1. Outstanding Lending		
a. Amount	319,902	313,886
b. Monthly Change	1.8% **	2.0%
c. Twelve - month change	17.6% **	17.0%
d. Average change (annualised)		
Latest three months	20.1% **	14.7%
Latest twelve months	17.6% **	17.0%
Associated with co-financing schemes		
- amount	12,249	11,037
- number	6570	6022
2. Gross loans made during month		
a. Amount	16,807	15,499
b. Number	11180	10578
3 New loans approved during month		
a. Amount	20,771	18,264
b. Number	12965	11588
By property age		
Property age - 15 years or below		
a. Amount	17,353	15,439
b. Number	10371	9351

Property age - above 15 years		
a. Amount	3,418	2,825
b. Number	2594	2237
Associated with co-financing schemes		
a. Amount	806	715
b. Number	414	360
4 New loans approved during month but not yet drawn		
a. Amount	13,841	11,517
b. Number	8448	7179

Source : Hong Kong Monetary Authority

***Adjusted for the effect of reclassification of residential mortgage loans by an institution amounting to HK$0.4 billion.*

Mortgage Securitization experience in Hong Kong

As emphasised in the above sections, securitization is still very new to the Hong Kong market. There were only four issues of MBS in Hong Kong so far, all of them were of CMO type. The total size is HK$3 billion with individual size ranged from HK$350 million to HK$1,000 million. Of these four issues, three involved mortgages originated by banks (Bank of America, Citibank and Standard Chartered Bank). The other involved mortgages originated by a finance company which is an affiliate of a property developer (Cheung Kong). As residential mortgages in Hong Kong are predominantly arranged on floating rate terms, the four issues of MBS are also on floating rate terms. The coupon rates on the MBS were set mostly with reference to HIBOR except that for the Cheung Kong issue which are set with reference to the best lending rate.

CHAPTER IV

HONG KONG MONETARY AUTHORITY'S MBS MARKET DEVELOPMENT PLAN

Survey on Primary Market by HKMA

In order to realise the potential of developing the secondary market for MBS in Hong Kong, it is necessary to get empirical information on the primary mortgage market so as to justify and forecast the development. In October 1994, HKMA conducted a survey on residential mortgage loans by collecting information from a total of 33 authorised institutions. Those authorised institutions are active participants in the residential mortgage market and account for above 90% of total residential mortgage loans in Hong Kong.

The result of the survey are summarised into 3 sections. They are the characteristics of the residential mortgage loans, performance of the loans, and the lending policy of authorised institutions.

Findings of the Survey

Characteristics of residential mortgage loans

There was a total of 338,249 residential mortgage loans at the end of September 1994. Of the total private housing stock in Hong Kong, around 40% had an outstanding mortgage. The average outstanding amount per loan was $787,000. The ratio of outstanding loan to valuation was 53.3% The profile of the age of the loans can be classified into three tiers : 68.2% of them was of less than 10 years, 22.8% of them was within 10 to 20 years while the remaining 9% was longer than 20 years.

On average, the life of the mortgage loan was 15.2 years. 94.5% of the loan was aimed at financing the purchase of flats, the others were all refinancing loans. One of the important characteristics is the interest payment structure, 96% of them was floating rate based, only 4% was of fixed rate.

Performance of Mortgage Loans

A very low loan delinquency/default rate, less than 0.5% of the total number, was observed from the survey. A very important implication was that, when comparing with other countries, the mortgage loan in Hong Kong is of very good quality. This, in turn, affects the pricing of the MBS since a lower premium may be possible due to the relative high quality of the mortgage loans.

Lending Policy

For the financial institutions studied, the maximum loan-to-valuation ratio has changed, due to the cap on the ratio imposed by the Government in 1991. For small to medium flats, the ratio dropped from 88.5% in 1990 to 69.5% in September 1994. For luxurious flats, the ratio dropped from 87.1% in 1990 to 54.8% in September 1994. In fact, the ratios remain roughly the same up to now, as there was not much change in the Government imposed limit on the ratio for banks.

Implications of the Survey Findings

Comparison with Benchmark Pool

Taking the Hong Kong mortgage-backed criteria published by Standard & Pool's in November 1994 as a benchmark pool for comparing with the survey findings as shown, it was found that the standards set out by Standard & Pool's is basically in line with the average loan characteristics of the Hong Kong mortgage market, or even better in some aspects; for example, smaller loan-to-valuation ratio, shorter contractual life. Smaller loan-to-valuation ratio implies less volatile to the fluctuation of property price while shorter contractual life indicates less vulnerable to the variation of interest rate. It will be elaborated in the following section. Except the valuation of property, in general, the loan characteristics of the loans in Hong Kong mortgage market is better than the benchmark by Standard & Pool's.

TABLE 10

COMPARISON WITH BENCHMARK POOL

	Stand & Pools Benchmark Pool	Survey Findings on Loan Characteristics
Loan Size (HK$)	max. 3 m	0.787 m
Loan-to-valuation ratio	70%	53.3%
Property age	< 10 years	< 10 years
Contractual life	max. 20 years	15.3 years
Occupancy status	owner-occupied	generally owner-occupied
Valuation of property	by a registered chartered surveyor	82% by independent valuation agents

Source : Hong Kong Monetary Authority

Quality of Residential Mortgage

Low Default Risk

The survey findings gives figures to support the market expectation on the low loan default/delinquency, which is around 0.43% of the outstanding loan amount.

Compared with the delinquency rate of FNMA and FHLMC in the US: 2.84% and 3.46% for multi-family mortgages in 1993, the loan default in Hong Kong is extremely low.

Low Loan-to-valuation Ratio

53.3% loan-valuation ratio means that there is a 46.7% downwards margin for a slump of the property price until mortgagors might give up their mortgage loan. Therefore, lower the ratio is, less the loan default/delinquency will be.

Lending Policy of Authorised Institutions

In response to the rocket rise of the property price in the past few years, authorised institutions execute more tight and prudential lending policies by lowering the loan-valuation ratio; in other words, it lowers the default risk of mortgagees.

Reliability of the Survey Findings

Although the survey findings is so encouraging on development of the secondary market for MBS in Hong Kong, it may be just an illusion and may not reflect the particular situation of mortgage market in Hong Kong.

Some of the mortgage loan samples submitted by the 33 authorised institutions were originated several years before the rocket rise of property market and the loan-to-valuation ratio is comparatively low. Even though there were some newly arranged loans, some mortgagors did not borrow up to the maximum ratio of 70% by ploughing back some of the capital they gained when they traded up the market during a rise of property price. Consequently, these two factors achieve a low default/delinquency loan since mortgagors have a big margin for a property price drop before mortgagees give up their loan.

Secondly, the 70% of loan-to-valuation ratio and the maximum 20 years of contractual life of loan are the policies formulated, or precisely speaking, regulated by the mortgagors with an implicit agreement with the Government. Therefore, it can foresee that the survey findings cannot exceed these limits. It can be better but not worse.

In other words, banks had adopted policies which minimise their risks and maximise their returns on mortgage loan business by reducing the loan-to-valuation ratio, shortening contractual life of loans and widening interest spread. That is to say the survey findings merely reflect a distorted rather than a true picture of the mortgage market in Hong Kong. Especially, when the supply of properties in Hong Kong is controlled by several huge property developers and the supply of mortgage loans is controlled by the banks, the direction of the mortgage market much depends on the bargaining power among property developers and banks. As long as the property price keeps rising, the default risk on mortgage loan can be negligible. Then, both banks and property developers get the mutual benefits.

Nevertheless, the Government also exerts intervention on them because the property price will directly affect the government income on selling lands. On the other hand, the Government also needs to give pressure to the major property players when there are too many grievances in the society if they drive the market too far from the actual status. Thus, the equilibrium point of the market is determined by the tripod of property developers, bankers and the Government.

The Mortgage Corporation Approach

To develop the secondary mortgage market, one of the alternatives is to set up a mortgage corporation. The mortgage corporation can help improve the efficiency of the real-estate financing in several aspects:

1. Funds can be mobilised from capital market investors to the housing market
2. Through the purchase of mortgages as well as the issuance of MBS by the mortgage corporation, the liquidity of mortgages is enhanced. Investors are more willing to enter into this market.
3. The mortgage corporation can target on the types of mortgages it acquires. In this way, it can help to assist in the implementation of housing policies. For instance, the US mortgage corporations have participated in lending programmes to promote home ownership among the low and middle income groups.
4. In stipulating the terms and conditions of the purchase of mortgage loans, mortgage corporations have considerable influence over the underwriting standards

of mortgage loans in the primary mortgage market. This may in turn have a positive impact on the quality of mortgage loan origination.

By stabilising the funding of mortgages, mortgage corporations help stimulating the loan originators to offer more choices to home buyers, such as fixed rate mortgages or combined fixed-rate (for a period) and thereafter adjustable rate mortgages.

Mortgage Corporation Proposal

After collect and analysing the result from the survey, the Exchange Fund Advisory Committee has given approval in principle to the setting up of a mortgage corporation. The mortgage corporation plan was announced in July 1996 with initial structure as follows :

(a) the mortgage corporation would be owned by the Government initially through the Exchange Fund with a capital base of HK$1 Billion;
(b) the corporation would be a limited company established under the Companies Ordinance; and
(c) the corporation would develop its business in two phases, starting with the purchase of mortgage loans for its own portfolio, followed by the issue of mortgage-backed securities.

The decision to establish a mortgage corporation was made following a two-month consultation exercise that ended in mid-June. During the consultation period, the HKMA convened a number of briefings and discussions with the various institutions and industry associations to explain the proposal and to receive comments. In addition, written comments on the proposal were received from 23 organisations/individuals from a wide spectrum of the community including the banking sector, capital market participants, real estate developers, political groups and academics.

HKMA commented that the overall reaction was very favourable, indicating broad agreement that the establishment of a mortgage corporation would contribute to banking and monetary stability, debt market development and home financing. There was also strong support for initial government ownership of the corporation in securing the acceptance and recognition of the corporation by the market.

Some comments and concerns have been expressed on specific aspects of the mortgage corporation proposal, including notably the projection of the shortfall in mortgage funds, the effects of the corporation on banks' mortgage lending business, the impact on the property sector, the risk management issues, the corporate structure , the involvement of HKMA, as well as the features of the debt securities to be issued by the mortgage corporation.

Projection of the shortfall in mortgage funds

There were mixed views on HKMA's projection of the potential shortfall in mortgage funds. Some banks believed that HKMA have overstated the magnitude of the shortfall while an academic economist considers the projection as reasonable. As HKMA have cautioned in the consultation paper, the assumptions used in the projection are inevitably crude. HKMA was not seeking to give a precise forecast on the potential shortfall. Rather, the projection was intended to illustrate that there was likely to be a substantial shortfall if the home ownership ratio in HK continued to rise as in the case of the USA and the UK. HKMA had also assessed the requirement for mortgage funds from the housing production angle, using the completion of 60,000 private residential units per annum in the next ten years. HKMA accepted that this figure was only a target towards which Government was seeking to achieve. There was no guarantee that this production programme would not slip. However, on the basis of these two approaches, HKMA was convinced that the shortfall of mortgage funding was likely to be substantial in the next ten years.

It has been argued by some banks that since the banking system has been able to meet the demand for mortgage funds adequately in the past, there was no reason why it could not continue to do so in the future. HKMA did not agree with this argument because the exposure of the banking system to property related loans, including residential mortgages, has risen steadily from 26% in 1980 to 39% in 1995. Unless a secondary mortgage market is developed through the setting up of the mortgage corporation, the concentration risk of the banking system is going to increase beyond a prudent level. The constraints that the banking system is facing in originating more mortgage loans are structural in nature due to the significant maturity mismatch between the deposit base and mortgage loans. Although one can argue that the aggregate deposit base has grown and will continue to grow steadily, the concentration and liquidity risks of individual institutions are significant risks because of possible migration of deposits from one institution to another.

Impact on banks' mortgage business

One of the concerns expressed by some banks is possible cherry-picking by the mortgage corporation, i.e. the corporation would pick the best quality mortgage loans from the banks' portfolios, thereby resulting in a deterioration in the overall quality of the remaining mortgage loans held by the banks. This concern stems from a misunderstanding on the way in which the mortgage corporation would operate. The mortgage corporation loans which conform to these standards are eligible for purchase by the mortgage corporation. It would be up to individual banks to offer a pool of conforming mortgage loans for sale to the mortgage corporation. Moreover, the minimum purchasing standards to be adopted by the mortgage corporation are likely to reflect the industry standards, which means that the loan portfolios retained by the banks would not necessarily be of inferior quality. Indeed, to the extent that banks seek to sell their mortgages for liquidity purposes, the existence of standards would encourage them to increase their credit quality.

The banking sector worried that the additional mortgage funds may result in excessive competition and a lowering of profit margin in banks' mortgage lending business. HKMA believed that banks need not worry unduly as the mortgage corporation is more likely to reduce the upward pressure on mortgage lending rates rather than force the rates to go down, if the demand of mortgage funds continues to grow as expected. Moreover, the mortgage corporation will complement rather than compete with banks, as it will not originate mortgage loans and will only purchase mortgage loans from the authorised institutions under the Banking Ordinance.

Impact on the property sector

There are mixed views on the impact of mortgage corporation on the property sector. But it is generally considered that a mortgage corporation operating on a prudent and commercial basis would not by itself lead to a sharp rise in property prices, as long as the banks continue to adopt a prudent lending policy and there is a steady supply of new residential properties.

Impact on the Government

One of the concerns on the proposal is that the mortgage corporation may entail substantial risks to the Government. HKMA believes that these concerns stem from some misunderstanding of the nature of mortgage lending, which has always had a very low default rate. In purchasing the mortgage loans, the mortgage corporation transfers as well as transforms the risks of such loans. Unlike banks which rely mainly on short-term customer deposits and interbank borrowings to fund long-term mortgages, the mortgage corporation borrows long-term funds to finance mortgage loan purchases, and is therefore not incurring maturity mismatch between its assets (mortgage loans) and liabilities (debt obligations).

Corporate structure and the involvement of the HKMA

There are mixed views on whether the mortgage corporation should be set up as a limited company under the Companies Ordinance or as a statutory corporation. HKMA believe that the former approach is more appropriate. The corporation will not need assume any statutory power or functions. Moreover, to set up the corporation as a limited company will remove the concerns of the banking sector that the corporation may possess statutory power to coerce banks to sell their mortgages. There will also be greater flexibility in widening the ownership structure of the corporation at a later stage should it be judged appropriate.

There have been some questions on whether the involvement of the HKMA in the operation of he mortgage corporation would gibe rise to a role conflict for the HKMA as a bank supervisor. HKMA believe such concerns can best be addressed by having a high degree of transparency in the operation of the mortgage corporation and having a Board of Directors with broad representation drawn from the private sector, such as the banking sector, capital markets, property sector, and independent professionals etc.

It has been suggested that there is a need for a regulatory authority to ensure the prudent management of the mortgage corporation. Yet, HKMA suggested that it is necessary or appropriate to do so. Firstly the mortgage corporation does not have any franchise or monopoly in the business that it seeks to do. Also, the securities which it issues would be subject to the general framework set up for the protection of investors. The Government, through the HKMA, would act as the overseer of the corporation, although the day-to-day management would be subject to the direction of the Board of Directors. There would be adequate mandate as defined its memorandum and Articles of Association and would operate on a prudent and profitable basis.

Issuance of debt securities by the mortgage corporation

In general, market participant have some uncertainty about the structure and arrangements for the debt securities to be issued by the mortgage corporation. Some market participants have suggested that a favourable rating, a low risk weight for capital adequacy purpose, and some forms of tax concession will increased investor's appetite for the paper. To enhance the liquidity of the paper, it has been further suggested that a suitable market making system should be put in place and that the paper should be accepted as eligible Repo securities for discounting under LAF. The HKMA would work closely with the capital market participants and the institutional investors to determine the most appropriate structure and arrangements for the debt securities to be issued.

CHAPTER V

IMPLICATIONS OF MBS DEVELOPMENT TO HONG KONG

Property Market

There are concerns as to whether the development of secondary mortgage market will exert upward pressure on property price. Mortgage securitization helps direct more funds into property market. It may in turn stimulate the origination of mortgage loans, resulting in greater demand for property and hence higher property prices.

In general, authorised institutions which are keen to securitise their mortgages are often those wishing to reduce their exposure to property sector. Therefore it is likely that bank resources so released will at least partly be diversified into other lines of business. Hong Kong Monetary Authority has been encouraging authorised institutions to keep annual growth in property-related lending to not more than the rate of nominal GDP growth, and to stabilise or reduce the share of such loans to not more than 40% of domestic loans. Thus, resources may not concentrate in property market to increase the property prices. It is considered that a mortgage corporation would not by itself lead to a sharp rise in property prices, as long as the banks continue to adopt a prudent lending policy and there is a steady supply of new residential properties.

If proper funding channels for long term loans are not developed, other less prudent forms of mortgage financing may emerge. For example, real estate developers may diversify into business of providing mortgage loans or home-buyers may seek overdraft loans to finance their home purchase. Conversely, a properly established secondary mortgage market will provide an avenue to raise long-term funds for mortgages.

Also, mortgage corporation help to even the flows of funds into property market. For example, it can reduce its purchase of mortgages during a property boom and increase the purchase in times of market recession. Yet there are objections as how far the mortgage can achieve this regulating function. When property prices are going down, banks may want to sell off their mortgages to the mortgage corporation, but the corporation would be more defensive when prices are falling because they do not want to buy mortgages with falling values. Likewise, with rising property values, banks would be more reluctant to sell their mortgages to the corporation as the underlying value is growing.

Banking Sector

On the banking side, as we have described, MBS reduces concentration risk by spreading the risks to holders outside the banking system. Second, it spreads the risks within the banking system by enabling banks that do not engage in direct mortgage lending to participate in the mortgage market.

The maturity and liquidity profile of the originating bank can be improved by reducing the proportion of property loans in the loan book. In order to meet the requirement of mortgage corporation, banks would improve their credit standards and documentation in loan origination. This, in turn, brings more robust financial situation for the banks. Banks will see their credit risks diffused. Also through origination and servicing fees they should receive from the government, they will bring in a new, "annuity-like stream of revenue" without increasing their percentage of loans.

The secondary mortgage corporation also enables the many foreign banks that want to enter the Hong Kong mortgage sector to acquire high-yield assets without the large operational costs of establishing a retail business.

Mortgage corporation is more likely to reduce the upward pressure on mortgage leading rates rather than force the rates to go down, if the demand for mortgage funds continues to grow as expected. Moreover, the mortgage corporation will complement rather than compete with banks as it will only purchase mortgage loans from the authorised institutions under the Banking Ordinance.

MBS also carries risk of giving incentive for authorised institutions to overexpand their loan book in the expectation of being able to securities. But a lot of local banks themselves hold a different view. For many banks, mortgage-related lending is both a core activity and their most profitable source of earning. They see no need for a mortgage corporation. Furthermore, there is no reason why banks which reach the limit of 40% of their total loan portfolio cannot securitise their own mortgage for sale to investors.

One concern of banks is how much they will be paid for the mortgages they hold. This is especially important in light of the currently fierce competition among banks to make home loans. There is worry that institutions, by securitising their best assets, ends up with an overall reduction in asset quality. The HKMA comforts them that it would be up to individual banks to offer sale to the mortgage corporation. The minimum purchasing standards to be adopted by the mortgage corporation are likely to reflect the industry standards, which means that the loan portfolios retained by the banks would not necessarily be of inferior quality.

There is also danger of non-controlled proliferation of mortgage securitization by non-banking entities (e.g. by property developers) which may weaken the banking system by encouraging disintermediation.

Other criticism include the operation of mortgage corporation as a wholly-owned government subsidiary. There are complaints from the banks that the HKMA is creating a false market, in the sense that banks have no desire to sell on mortgage loans at present. It effectively obliges banks to do so in return for a paltry 20 basis points in operating fees, then it is depriving them of income.

In order to have benefits outweigh risks, appropriate supervisory standards and healthy track on market development process are mandatory. Anyway, with the government mortgage-buying corporation still in 'a rather embryonic' state, it is believed that banks will not see benefits for at least the next three to five years.

Consumers

There are a few important consequences to consumers. Firstly, it lowers mortgage rate as improved liquidity in mortgage loans reduces risk premium on such loans. Secondly, when MBS is a popular investment instrument, it increases availability of mortgage funds by attracting funds from non-bank sectors. However, the two beneficial results may lead to increasing demand on properties, in turn increase property prices. Unless supply of housing stock increases, the benefits may be offset by the higher property prices.

It is expected that the secondary mortgage corporations can assist in the implementation of housing policy by promoting mortgage financing for a specific targeted groups of home buyers, such as lower income people. The way to do is by purchasing a particular types of mortgages. The problem is the conflict of interest between financial and social role. Taking the same example, mortgages for lower-income social group may have higher default rate.

Debt Market

MBS will be a new instrument for the debt market. This is very important in Hong Kong as the debt market is not well-developed. The prime object of the mortgage securitization is to intermediate long-term savings such as insurance and pension funds to meet the rising demand for long-term mortgages. However, the insurance and pension funds industries in Hong Kong are still nascent, and already have a range of highly rated government-backed bonds from the HKMA itself, the Mass Transit Railway Corporation, the Airport Authority and the Housing Authority.

Further to that, many pension funds still prefer Asian equity markets to debt markets, because of the greater volatility and higher potential returns. Even those Hong Kong pension funds that do invest in bonds often choose US Treasury Paper over Hong Kong dollar-determined bonds. This is because the peg linking the Hong Kong dollar to the US dollar eliminates most foreign exchange risk for those companies that must pay customers in Hong Kong dollars. Investors would not bother investing in Asia since he can hold Treasury Paper without any exchange risk. They can get higher return on the long end in the US market, where longer maturities are available.

Moreover, a number of institutional investors would prefer fixed rate assets. But as high as 96% of outstanding mortgage loans in Hong Kong are on floating rate terms. The government will have to pay generous yields to woo investors away from other safe, fixed-income investment.

The four mortgage-backed bonds issued in Hong Kong between 1993 and 1995 generated a very lukewarm response. This was partly because the premium were not considered adequate to offset the risk that the maturity of the bond could change based on market conditions. Also some investors have adopted a wait and see attitude because they are not familiar with the product.

An uncertain payback period is also considered a risk of mortgage backed securities that ranks in scale with default.

Since the mortgage corporation would be 100% government-owned at the start, concerns have been raised that mortgage-backed securities would compete directly for investment dollars with the HKMA's Exchange Fund notes and the Mass Transit Railway Corp.'s (MTRC) notes, which share the A3 Hong Kong sovereign credit rating issued by Moody's Investors Service Inc. But HKMA insists that the market is large enough that there is no competition between that mortgage corporation and existing MTRC or Exchange Fund paper.

In long run, the hand-over of sovereignty of Hong Kong to China in July 1997 might fuel interest in Hong Kong dollar-denominated bonds, by throwing doubts on the solidity of the peg. It is expected that as there would not be two currencies in one country forever, the peg will have to go. Investors have to start thinking about gaining exposure in Hong Kong dollar-denominated assets to match Hong Kong dollar liabilities.

The new market's success will be the ability to attract major investors in long-term fixed income products, including pension funds, life insurance companies and other offshore investor. In the aspect, the proposal has come at the right time since the government also intends to introduce a mandatory pension scheme for all Hong Kong workers.

CHAPTER VI

FACTORS INFLUENCING ADOPTION OF MBS IN HONG KONG

Having look at the characteristics of MBS product and the market situation in Hong Kong, it is believed that there are two main issues on the market development of MBS. The first one is the asset quality while the second one is the liquidity of the MBS.

Asset Quality

It is clear that MBS is a fairly new product in Hong Kong's financial market. The paper must be of good quality to gain acceptance among investors. As from the experience of introducing the Exchange Fund Bills and Notes, which is very successful in the market, by the HKMA, it is anticipated that MBS should not entail much difficulties to the introduction regarding operational issues. There is a real threat that if sub-quality paper is issued in the market at a time when the investing public are not yet sophisticated enough in these products, a few non-performing issues might have adverse effect on market development.

The asset quality of mortgage-backed securities is affected by two main factors : quality of the underlying mortgage pool and the credit enhancement provided. The underlying mortgage pool constitutes the assets upon which the cash flows are generated. The quality of the mortgage pool is, in turn, affected by the overall performance of the property market and by the characteristics of individual loans.

Quality of underlying mortgage pool

The underlying mortgage is affected by the overall performance of the property market. The quality of underlying mortgage pool is determined by many factors including loan-to-valuation ratio, year of seasoning, occupancy status, loan purpose, mortgagees' background, property age, presence of mortgage insurance, type of mortgages, etc.

From the HKMA survey illustrated in the Chapter IV, it is found that the loan-to-valuation ratio, occupancy status, loan purpose, mortgagees' background, and property age give a great support on the quality of the underlying mortgage pool. On the other hand, the loan characteristics is quite competitive with the standard used in Standard & Pool's benchmark pool. It is a very important factor for supporting the MBS introduction in Hong Kong and attracting customers world-wide. In fact, the years of seasoning, geographical location of the mortgages, types of mortgages also play a very important role in deciding the asset quality.

The standards used in Standard & Pool's benchmark pool with respect to Hong Kong have been considered by the HKMA. Mortgage pools that compare more favourably to this benchmark will be rated more favourably and vice versa. Very often credit support is provided to upgrade the quality of the MBS, particularly when the mortgage pool does not fully live up to the standards in the benchmark pool.

Credit enhancement

Credit enhancement is the amount of "capital" provided by mortgage sellers as backing for potential default by the mortgagors. In order to give a better protection to MBS investors, the MBS issuers needs to offer a higher level of credit enhancement but this will increase the cost of issue. It is expected that the credit enhancement is likely to be in excess of 10% of the pool of mortgages to be sold, simply because the market in Hong Kong is new and needs to build its image, brand and creditability.

From the US experience, several forms of credit enhancement are possible. Credit enhancement can be provided by senior/subordinated class securities. Senior/subordinated structure, which is a form of "internal" credit enhancement, can generate cashflows to subordinate other cashflows of securities in other classes. Depending on the amount of the cashflows placed in the subordinated class, the senior class may be graded with a higher investment-grade rating. The second method is to share the risk with a third party. The third party may be an mortgage insurer, who will bear certain amount of credit losses. Or, it may be a corporation, who may guarantee reimbursement of losses on a mortgage pool up to a specified amount. The third method is to give credit support by the interest spread between the interest paid on the mortgages and that paid to MBS holders. Either one or a combination of them can be useful for credit enhancement.

Prepayment Risk

Prepayment risk is inherent in mortgage loans usually. An increase in mortgage prepayment will cause losses to the MBS holders since they are unable to replace their MBS with other paper with the same high yield. Since the majority of mortgages in Hong Kong are arranged on floating rate basis, prepayment does not occur during an interest fall, but instead, during a rally of property market because property owners trade up the market. In rating MBS in Hong Kong, Standard & Poor's policy is to encourage issuers to allocate the risk to the MBS issue at senior class. It requires that all prepayments be allocated to the senior class in the first five years of the pool's life. As a result of the highest risk period in the first five years, the paydown period of the senior tranche is accelerated.

Liquidity

Liquidity of the MBS market determines how easy the securities can be converted into cash. The higher degree of liquidity in the securities, larger the investor base and lower the borrowing cost. It will in turn encourage issues and trading activities. The MBS market in Hong Kong is at an early stage of development. As described above, only four issues involving a total amount of $3 billion have been concluded up to 1995 and secondary market activity is thin. There is a general consensus among market participants that the following factors are crucial to the level of trading interests in MBS :

(a) overall market size and size of individual issues;

(b) degree of standardisation of the MBS;

(c) credit rating; and

(d) transparency of the underlying mortgage pool.

Clearly, in order to attract more investors and gain wider acceptance, more attention must be paid on the above issues.

Market Size

It is unrealistic to expect a high level of secondary market activity in the early stages of the development of the MBS market. In fact, it may not be cost-effective for a financial institution to set up a trading desk for MBS if there are insufficient securities to trade.

Clearly, HKMA has to pay attention to maintaining the market size and increase it subsequently. The threshold beyond which trading activity begins to pick up varies considerably among different markets. Under conducive market conditions (where products are easy to trade and market infrastructure is efficient), the initial increase in trading activities quickly builds up its own momentum, culminating in a take-off in the secondary market.

The size of individual issues may also affect secondary market liquidity. Traders may not have an incentive to make a market if the issue size is small and the paydown of mortgage loans is fast. Nonetheless, provided that the MBS market as a whole has attained a certain size, a small issue with a conforming mortgage pool may be able to achieve a higher liquidity than a larger issue with a non-conforming pool.

Standardisation

Standardisation of documentation and market practice is a process of mortgage securitization and it is a necessary procedure in order to establish the brand name world-wide and give confidence to international investors. Conformity of underlying mortgage pool to certain loan standards and standardisation of the MBS can ease the effort of traders and investors to understand the characteristics of issues and in turn lower the transaction cost.

Presently both the primary and the secondary mortgage markets in Hong Kong are quite diversified. Although complex structures may cater to specific investors, they do not serve the general market needs. In the introduction stage, there will likely be a convergence towards some basic forms of standards over time, driven by the requirements of credit rating agencies and by investor preference.

While some standardised practice will gradually evolve, the process of standardisation may possibly be speeded up through collective, industry wide efforts. The areas where collective efforts can achieve better results than individual efforts will need to be carefully identified by the industry. Alternatively, the presence of a "Fannie Mae" type of mortgage corporation in Hong Kong to standardise MBS issues will significantly improve the liquidity of such product.

Credit Rating

In order to attract international investors, it is necessary to have an international rating agency to grade the MBS. The cost implication to hire an international rating agency indicates that it may not be cost-effective to rate an issue smaller than HK$500 million. It is also observed that MBS guaranteed by the government usually attracts more trading interests due to the enhancement of credit quality.

Transparency

The quality of the underlying mortgage pool of a rated MBS issue may deteriorate when there is a change in the pattern of loan prepayment and delinquency. Therefore, it is necessary to remove the barrier due to information asymmetry among MBS market players so as to improve the market efficiency. Essential information on loan performance to traders on regular basis or through the distribution of real-time computer network can improve the information velocity and increase the transparency of the market activities.

CHAPTER VII

RESEARCH DESIGN AND EMPIRICAL FINDINGS

Objective

In order to verify the above analysis and to understand the real market situation, a survey is done in the market to collect some information about the project. The result allows us to make more detailed recommendations to HKMA in carrying out the project. In view of the unique nature of the product in Hong Kong, personal interviews may not be an effective / efficient to achieve the purpose and mail survey approach is used.

The objective of the survey is to investigate the attitude of the group of target market participants for MBS in Hong Kong. As the product is expected to be traded within institutional investors only, a tentative set of target recipients were identified in the following fields : commercial bank, investment bank, asset management company, mutual fund company, insurance company, corporate investment firm and brokerage firm. It is anticipated that this type of identification will give an attempt to broadly cover the key players of the product.

Target Respondents Sampling

The target sample size for this questionnaire research is 30 to 40 which is considered to be reasonable due to the narrow range of target groups. In order to get sufficient responses, 120 copies of questionnaires were distributed, mostly to friends in the finance industry and some partners at work. This ensures the responses fall on the category that we defined.

Owing to the nature of the MBS product, the target recipients of the questionnaire have to be carefully selected. One thing being that with constraint of the objective of the questionnaire, it could only be sent to the addressees of substantial seniority, our threshold for this being mid-management level. This is because the addressee should be someone making decisions in the company, or at least he knows the direction and initiatives of the company clearly.

Survey Design

The questionnaire consists of three sections : Section one focused on the current situation on the use of MBS in the company of the respondent. Section two was composed of questions of the personal opinions on the MBS development in Hong Kong and Section three aimed at collecting some demographic information on the respondent and the company.

The design of the questionnaire was furnished mainly on a descriptive basis. It was expected that the result would reflect the viewpoint of the general public, through the results obtained from Section II of the questionnaire, which is a 5-point scale framework. The significance of the result lies on the fact that our target group consists mostly of market participants.

Results from Section I of the questionnaire will give a proportion of the companies already dealing with any asset-backed securities or mortgage-backed securities and the purpose of such. Various factors are to be ranked by them in the order of importance for the development of MBS.

Section II was divided into five parts. The first part asked the target's opinion on the impact of the MBS development on customers. The second part asked about the impact of its development on the property market. Third part is on its impact on the banking sector. The next part asked about the impact of MBS development on the debt market. Lastly, a general viewpoint of the target on the MBS development in Hong Kong by the HKMA was assessed. In all parts within this section, scale of 1 to 5 represents "Agree strongly", "Agree", "Neutral", "Disagree", and "Disagree strongly" respectively.

The last section was a series of general questions aiming at obtaining the target's demographic information, such as nature of business and job function of the respondent.

Empirical Findings

It is expected that return rate of the questionnaires will be low due to the fact that most of the recipients are busy senior managers. Taking care of this, a total of 120 questionnaires have been sent out to a group of personnel that have potential chance of participating in the market of MBS. The number of questionnaires returned is 33, representing a return rate of 27.5%.

The Opinion Survey on Mortgage Backed Securities Development posed questions on the degree of utilisation of MBS in Hong Kong and the general attitude towards the MBS development in Hong Kong. The survey results suggested that most of the financial market participants had little or no participation in MBS activities. Many of the respondents did not have a clear idea on mortgage securities. Thus, HKMA needs to pay more efforts on the MBS promotion and possibly offer courses / educational programs to market participants. Most of the respondents indicated that the quality of underlying mortgage, credit rating and secondary market liquidity as the most important considerations for their participation in MBS market. Since the mortgage quality in Hong Kong is quite good, the market development should focus on credit rating enhancement and secondary market formation. Regarding the preference on the type of MBS (fixed rate or floating rate), the results from this survey were mixed and further work needs to be done to study the preference of the market participants.

The results generally supported the view that mortgage securitization would bring benefits to the end customer by channelling long term funds to housing sector and eliminating other non-healthy forms of mortgage financing. Yet, there was no clear indication that the MBS market helped to implement specific type of housing policies. There was also worry among the respondents that the MBS development might drive up property prices.

Contrary to common belief, it was found that banks were willing to sell their mortgages even though mortgage lending was their prime activity and they had adequate capital. Most respondents supported the view that mortgage securitization would reduce the concentration risk of banks. Yet, there were some worries that securitization might weaken the banks' role by encouraging disintermediation and the possible abuse by banks to over-expand their loan bank.

The results on the market acceptance by institutional investors were rather mixed. It is expected that HKMA needs to enhance the promotion efforts to debt market players in order to increase the acceptance of the instrument.

The results tended to support HKMA in the development of MBS market and most respondents were positive about the future outlook of the instrument.

<u>Use of Mortgage Backed Securities in Hong Kong</u> (Section I, Question 1 - 6)

The survey showed that most of the institutions did not participate in any form of Asset Backed Security or Mortgage Backed Security market activities. Out of the 33 respondents, 85% indicated that their companies never participate in any MBS market activities, and 15% indicated that their companies only participate in MBS activities occasionally. Types of MBS used by them were CMO, Mortgage Backed Bonds and Mortgage Pass-Throughs. About half of the respondents reported that the primary use of MBS is hedging. Other reasons for using MBS included fixed stream of payment, capital / asset ratio improvement and special execution for customer. None of the respondents suggested profit-oriented trading as the prime reason for using MBS.

The respondents' attitude towards the future MBS activities in Hong Kong was mixed. About 42% of the respondents suggested that they have intention to participate in the local MBS activities while 58% reported no intention of participation. Regarding the type of market activities for those with intention to participate in MBS, about 57% reported trading of MBS and 43% reported selling of mortgages. For those with no intention to participate in any MBS activities, about 16% reported company policy as the major reason for non-participation.

Considerations for Participation in MBS Market in Hong Kong (Section I, Question 7 - 11)

For the factors affecting the consideration of participation in local MBS market, responses suggest that the overall ranking in decreasing order of importance are : (1) Quality of underlying mortgages, (2) Credit agency rating, (3) Secondary market liquidity and (4) Clear legal issues. In fact, about 64% of the respondents indicated quality of the underlying mortgages as the most important criteria. For the opinion on the best way for credit enhancement, the ranking in decreasing order of effectiveness are : (1) Third party enhancement , (2) Cash / collateral accounts, (3) Subordination and (4) Overcollateralisation. About 46% of the respondents suggested third party enhancement and 30% of the respondents suggested cash / collateral accounts as the most effective way of credit enhancement. The results suggested that market participants were not entirely comfortable with the more popular overcollateralisation and / or subordination approaches found in US or UK markets. For the opinion on the factors essential to secondary market liquidity, the results suggested the following overall ranking in decreasing order of importance : (1) Credit rating, (2) Standardisation of MBS, (3) Transparency of underlying mortgages and (4) Clearing / settlement infrastructure.

Regarding the participant's preference for the type of MBS, only 21 respondents indicated their choice and 12 respondents simply did not answer the question. Out of the respondents indicating their preference, some 57% reported fixed rate MBS as the preferred choice while the remaining suggested floating rate MBS.

Five respondents gave suggestion on the enhancement of MBS development in Hong Kong. Three of them suggested that promotion and / or education programs and two of them suggested development of a liquid secondary market.

Implication of MBS Development on Various Sectors (Section II, Question 1 - 15)

About 70% of the respondents agreed that MBS could ultimately improve the financial intermediation process and bring real benefits to the end customers. Respondents generally agreed that MBS could enable loan originators to offer more choices to the mortgagors by channelling funds to the housing sector (58% agree and 33% neutral about the idea).

The results on the function of mortgage corporation in implementing housing policy objectives were unclear (52% of the respondents neutral about the idea, 21% agree and 27% disagree). Respondents tended to agree that the development of the secondary mortgage market would make more funds available to the property market and drive up property prices (42% agree, 18% neutral and 27 disagree). At the same time, about 58% of the respondents agreed that development of the secondary mortgage market would channel long term funds to the mortgage market and eliminate other less healthy forms of financing.

Regarding the implication of MBS development to banks, most of the respondents generally agreed that mortgage securitization could reduce the concentration risk of banks. Yet, there was a tendency of agreement about the possible problem of banks over-expanding their loan-books as a result mortgage securitization (39% agree / strongly agree and 33% neutral). The overall comment also tended to disagree the possible adverse impact of mortgage securitization in weakening bank's role by encouraging disintermediation.

Most respondents disagreed with the following viewpoints : (1) banks are unlikely to sell their mortgages due to the emphasis of mortgage lending as prime activity, (2) banks need not reduce interest rate risk due to high percentage of variable rate mortgages, and (3) banks have adequate capital and have no need to sell their mortgages to raise capital. It is important to note that most of the banks participating in mortgage origination have a similar view as other non-mortgage originating companies.

Most of the respondents agreed that institutional investors would welcome MBS to be a form of valuable assets. About 33% of the respondents believed that institutional investors would actively participate in the secondary mortgage and about 58% neutral about the idea, indicating only modest market acceptance.

Regarding the overall prospect of MBS market in Hong Kong, most of the respondents tended to agree that HKMA was going in the right direction in the development of mortgage securities and the market outlook was still good.

Demographics of the Respondents (Section III, Question 1 - 8)

About 52% of respondents came from commercial banks, 27% from investment banks and the remaining from asset management firms, brokerage firms and other institutional investment companies. About half of the commercial banks were involved in mortgage originating activities. Just one investment bank reported participating in such activities.

There is an even spread in the company size (in terms of corporate asset) of the respondents, with approximately equal number of firms from less than US$500 Million to over US$ 5 Billion. In the area of corporate income composition, about 30% of the respondents' suggested that their companies have less than 10% foreign income. For the remaining ones, the number of companies with foreign income composition between 10% to over 50% range was quite evenly distributed. For the length of business history in Hong Kong, most of the respondents' company have been operating in Hong Kong for over 10 years.

CHAPTER VIII

RECOMMENDATIONS

As exploited in the above section, it was seen that the general public had a diversified point of view basically. However, focusing on a microscopic view, it could still be concluded that people generally had a "sit-and-see" attitude. Firstly, most of them do not deal with the product currently which is understandable since most of them find the product exotic and unfamiliar, it is natural to conceive in this way. To summarise, some elements can be improved to make the project of introducing MBS smoother.

Simplicity

As being pledged by the HKMA, they intend to introduce simple structured MBS in the first attempt. In fact, this is proved to be vital. As found out from our research, most of the target have little knowledge about MBS products. If this is the case, then they would not participate in the trading and marketing activities of the MBS and this would in turn lower the volume of MBS transactions, thus hindering its development.

Going a step further, it would be beneficial to the development process if HKMA can organise education in the form of roadshows, seminars or even courses to the target participants in the industry. Not only will this help educating the public but will also show the enthusiasm of HKMA in introducing the product in Hong Kong.

Credit Rating

The Government Exchange Fund Bill/Note program has been very successful in Hong Kong. One of the important reasons for this is the credit ratings for these papers. It is very similar to Treasury Bills in US. Therefore, market players feel very comfortable and confident with it and those its widely accepted in the market. This is actually a sign to HKMA. Confidence of people on a financial products often lies on its credit ratings. As reflected by our research result, credit enhancement comes out as one of the key component that the public think is important for the development of MBS. This is especially true and conforms with the principle behind MBS. As the stream of income of MBS comes from the payment of mortgage loans from those mortgagees, credit worthiness of these loans become the most critical for determining the quality of these MBS products. Therefore HKMA should set up some kinds of policies to ensure the high quality of the mortgage loans.

From a historical perspective, the default rate of mortgage loan in Hong Kong is low. To conform with the market practice, however, the mortgage corporation should obtain published credit ratings by international rating agencies on their securities to help the public in assessing the MBS and to enhance their confidence.

A more important reason for credit rating is that it helps investors to price the products more accurately. In the world in investment institutions, products of different credit ratings have different premium over the risk-free price of Treasury bonds. Without an officially accepted rating available in the market, only large institutions with internal research team would probably be able to deal with the MBS. This would finally hinder its development in Hong Kong.

Securitised products often obtain a higher rating than that of the seller of the assets. However, this is only possible by separating the credit of assets from the credit of the seller. Rating agencies such as S&P require the transfer of assets to be regarded as a "true sale" of the assets under applicable law and accounting standards rather than a pledge or hypothecation of the assets to achieve the necessary separation.

It is important to note that credit rating can bring many consequences. Recent example is the event in the Thai banking and finance sector. Authorities announced measures to restore investor confidence and plans were made for troubled Finance One to be acquired by Thai Danu Bank. Thus, it can be seen that although credit rating facilitates the market development, it may also lead to adverse effect such as downgrade of rating, if the underlying quality of the securities is getting worse.

Standardisation

The underlying mortgage pool should broadly conform with the benchmark pool as this is an important building block for developing a more homogeneous MBS product over time. Authorised institutions wishing to securitise their mortgages are encouraged to have an early discussion with the HKMA on issues such as balance sheet treatment of the mortgages and the capital adequacy ratio for the MBS paper.

As market development is greatly helped by a standardisation of MBS product, collective effort on the part of market participants in reducing the heterogeneity in the structure of MBS and the underwriting standards is considered desirable.

From the survey results, it is observed market participants prefer simple forms of credit enhancement like third party enhancement or cash / collateral. The market players are not yet accustomed to more popular overcollateralisation and / or subordination approaches found in US or UK markets.

The results did not show a clear market preference on the type of MBS (fixed rate or floating rate). Thus, HKMA may need to do further study on the preference of the market participants.

Supporting Infrastructure

Debt market has not been as developed as the equity market in Hong Kong. This leads to a greater need for better supporting infrastructure for the development of MBS. This includes the legal system, monitoring systems and agents, regulatory environment etc. In the current situation, the mortgage corporation was set up by the HKMA, and was fully backed by the Government. It is therefore anticipated that the corporation will set up a clear framework for the development of it.

Property market is one of the most important element that can affect the MBS market, and vice versa. This is so because the mortgage corporation may help to assist the implementation of housing policy objectives Close monitoring of the property market condition should be beneficial to the MBS development. Since the property market condition can greatly affect the mortgage supply (e.g. the demand and supply of flats), it is important that both markets have a clear and objective communication that is always at presence.

According to the announcement of HKMA, the Ministry of Housing of the Government has been appointed a place in the committee in the Mortgage Corporation. This is very logical in which a bridge between the two markets was established so that both can be more transparent to the other. We will expect to see a much deeper influence on the property through the policy of MBS and vice versa.

Secondary Market Liquidity

Most of the market participants are highly concerned with market liquidity of the MBS. HKMA should assist the private sector in developing the secondary mortgage market. In considering whether to participate, the Government would need to take into account of issues in a wider perspective, including the financial implications, the contribution of the corporation to banking stability and to the development of the debt market, as well as the impact on the property market. HKMA will discuss the matter with the relevant branches of Government in the light of views expressed in the Group.

Similar policies similar to those in handling the repos can be set out. In that way, a market of high liquidity is ensured with the participation of the Mortgage Corporation on behalf of HKMA in buying and selling the MBS against the participants. This can be done subject to some conditions so that participants can refer to the Mortgage Corporation as a last resort when they are in urgent need of buying or selling, for example due to liquidity problem.

Marketing Effort

HKMA should proactively approach authorised institutions that will likely securitise their mortgages, on issues such as balance sheet treatment of the mortgages and the capital adequacy ratio for the MBS paper.

CHAPTER IX

SUMMARY AND CONCLUSIONS

In this paper we have looked into the background of the MBS market, the characteristics of the product, and the experience of other countries. The factors leading to the development of MBS in Hong Kong, HKMA's mortgage corporation plan, and the factors / implications of the MBS development were also discussed.

In order to reflect the current issues and to suggest improvements for the MBS development, an independent survey was carried out which covered most of the parties that are potential players of the MBS market.

From the survey results, it is found that most corporations and financial institutions were not negative view towards the product. Yet, they were not completely knowledgeable about the instrument. This is not surprising as debt market and debt product have not been well-developed in Hong Kong. This shows a sign to HKMA in implementing its project : education of market participants will be essential to the success of the MBS development project.

Thus, HKMA's plan to make simple products in the early stage of development to help promoting the product to the public aligns with the survey findings. Due to the nature of MBS, standardisation and credit ratings are far more important in determining its value than for other types of products. Rating by standard agents would also help its promotion.

Several recommendations have been identified in this project, and the HKMA is in the course of introducing the product with list of the committee members decided. This results of this project may well serve the purpose of guiding the way HKMA implement the project. The prospect of the MBS market is still quite promising and HKMA's development effort is crucial to the success of the MBS. No matter what result will turn up, it is important to note that MBS will be an important milestone in debt market development in Hong Kong.

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APPENDIX

Opinion Survey on Mortgage Backed Securities

Section I

Section I asked about the use of Mortgage Backed Securities in the respondent's company and the opinion on the critical success factors for MBS development in Hong Kong

1. How often does your firm participate in activities of asset-backed securities (ABS)?

	Frequently	Often	Occasional	Never	Total
Total Number of Respondents	0	1	5	27	33
Percentage	*0%*	*3%*	*15%*	*82%*	*100%*

Response broken down by type of company					
	Frequently	Often	Occasional	Never	Total
Asset Mgt Company	0	0	0	2	2
Brokerage Firm	0	0	0	2	2
Commercial Bank	0	0	2	15	17
Corporate / Institutional Investment	0	0	0	2	2
Investment Bank	0	1	2	6	9
Mutual Fund / Insurance Co	0	0	1	0	1
Total Number of Respondents	0	1	5	27	33

2. What kinds of asset-backed securities does your firm deal with ?

Type of Asset Backed Securities	Number
Credit Card Receivables	1
Mortgage Loan Receivables	1
Lease Account Receivables	1
Total Number of Respondents	3

3. How often does your firm participate in activities of mortgage-backed securities (MBS) ?

Response broken down by type of company					
	Frequent	Often	Occasional	Never	Total
Asset Mgt Company	0	0	0	2	2
Brokerage Firm	0	0	0	2	2
Commercial Bank	0	0	2	15	17
Corporate / Institutional Investment	0	0	0	2	2
Investment Bank	0	0	2	7	9
Mutual Fund / Insurance Co	0	0	1	0	1
Total	0	0	5	28	33
Percentage	*0%*	*0%*	*15%*	*85%*	*100%*

4. Which of the following types of mortgage related securities does your firm participate in ? (may choose more than one)

Response broken down by type of company					
	Mortgage Pass-Throughs	Mortgage Backed Bonds	Mortgage Pay-thru Bonds	CMOs	Total
Asset Mgt Company	0	0	0	0	0
Brokerage Firm	0	0	0	2	2
Commercial Bank	1	1	0	0	2
Corporate / Institutional Investment	0	0	0	0	0
Investment Bank	0	2	0	2	4
Mutual Fund / Insurance Co	0	1	0	0	1
Total	1	4	0	4	9

5. What would be the purpose of dealing with asset-backed securities ? (may choose more than one)

Trading for profit-taking	0
Looking for a steady stream of coupon payment	2
Hedging purpose	5
Improve capital / asset ratio	2
Specially executed for customers	2
Others	0
Total number of respondents	11

	Looking for a steady stream of coupon payment	Hedging purpose	Improve capital / asset ratio	Specially executed for customers
Asset Mgt Company	0	0	0	0
Brokerage Firm	1	1	0	0
Commercial Bank	1	1	2	1
Corporate / Institutional Investment	0	0	0	0
Investment Bank	0	2	0	1
Mutual Fund / Insurance Co	0	1	0	0
Grand Total	2	5	2	2

6. Does your firm intend to participate in any activities of the mortgage-backed securities to be introduced in Hong Kong ?

	YES				NO
	Number of respondents	Activities			Number of respondents
		Selling of mortgages	Trading of mortgage-backed securities	Others	
Asset Mgt Company	1	0	1	0	1
Brokerage Firm	2	0	2	0	0
Commercial Bank	8	6	3	0	9
Corporate / Institutional Investment	0	0	0	0	2
Investment Bank	2	0	1	1	7
Mutual Fund / Insurance Co	1	0	1	0	0
Total	14	6	8	1	19

For the respondents indicating no intention to participate in MBS market activities, three mentioned that company policy as the major reason.

7. Please rank the factors below in the order of importance affecting your consideration of participating in mortgage-backed securities : *(1 = Most important, 5=Least Important)*

	Credit agency rating	Quality of underlying mortgage	Secondary market liquidity	Clear legal issues	Others
Rank 1	4	18	4	2	1
Rank 2	15	5	8	1	0
Rank 3	7	5	11	6	0
Rank 4	3	1	6	19	0
Rank 5	0	0	0	0	28
Average Rank	*2.31*	*1.62*	*2.66*	*3.55*	*4.86*

Note : Total number of respondents is 29. One respondent mentioned "transaction costs" as the most important criteria.

8. What do you think will be the best way for credit enhancement of the MBS ?

	Over-collateralisation	Subordination	Third Party Enhancement	Cash / Collateral Acct	Total
Asset Mgt Company	0	2	0	0	2
Brokerage Firm	0	0	1	1	2
Commercial Bank	1	1	5	3	10
Corporate / Institutional Investment	0	0	1	1	2
Investment Bank	0	1	5	3	9
Mutual Fund / Insurance Co	0	1	0	0	1
Total Number of Respondents	1	5	12	8	26

9. Please rank the factors below in the order of importance, which you think will affect the secondary market liquidity of the MBS : *(1= Most important)*

	Standardisation of MBS	Credit rating	Transparency of underlying mortgage pool	Clearing / settlement infrastructure	Listing of securities in organised exchanges
Rank 1	6	11	5	4	2
Rank 2	8	4	4	8	5
Rank 3	5	6	10	4	3
Rank 4	2	5	7	6	8
Rank 5	7	2	2	6	28
Average Rank	*2.86*	*2.39*	*2.89*	*3.07*	*4.20*

Note : Total number of respondents is 28.

10. What is your firm's preferred MBS ?

	Fixed Rate	Floating Rate	No Answer	Total
Asset Mgt Company	0	2	0	2
Brokerage Firm	0	1	1	2
Commercial Bank	5	4	8	17
Corporate / Institutional Investment	2	0	0	2
Investment Bank	4	2	3	9
Mutual Fund / Insurance Co	1	0	0	1
Total	12	9	12	33

11. What would you suggest to help enhancing the mortgage-backed securities development in Hong Kong ?

Only 5 respondents answer this question. Three respondents mentioned promotion / education programs on MBS and two respondents indicated market liquidity.

Section II

Section II asked about the respondent's personal opinions on implications of MBS development

Questions 1 -2 deal with the impact of MBS development on customers
Questions 3 - 5 deal with the impact of MBS development on the property market
Questions 6 - 11 deal with the impact of MBS development on the banking sector
Questions 12 - 13 deal with the impact of MBS development on the debt market
Questions 14 - 15 ask about the respondent's overall view on the MBS market

The following rate is used for all questions in this section :

Agree Strongly	1
Agree	2
Neutral	3
Disagree	4
Disagree Strongly	5

1. MBS can ultimately improve the financial intermediation process, bringing real benefits to the customers (e.g. in the form of lower mortgage rate or increased availability of mortgage funds)

	Agree Strongly	Agree	Neutral	Disagree	Disagree Strongly	Total
Asset Mgt Company	0	2	0	0	0	2
Brokerage Firm	0	2	0	0	0	2
Commercial Bank	4	9	3	1	0	17
Corporate / Institutional Investment	0	2	0	0	0	2
Investment Bank	0	7	2	0	0	9
Mutual Fund / Insurance Co	0	1	0	0	0	1
Total	4	23	5	1	0	33
Percentage	*12%*	*70%*	*15%*	*3%*	*0%*	*100%*
Average Score : 2.09						

2. MBS can enable loan originators to offer more choices to mortgagors by channelling funds to the housing sector

	Agree Strongly	Agree	Neutral	Disagree	Disagree Strongly	Total
Asset Mgt Company	0	2	0	0	0	2
Brokerage Firm	0	1	1	0	0	2
Commercial Bank	0	9	6	2	0	17
Corporate / Institutional Investment	0	1	1	0	0	2
Investment Bank	0	5	3	1	0	9
Mutual Fund / Insurance Co	0	1	0	0	0	1
Total	0	19	11	3	0	33
Percentage	*0%*	*58%*	*33%*	*9%*	*0%*	*100%*
Average Score : 2.52						

3. The mortgage corporation can help to assist the implementation of housing policy objectives
(e.g. through selection of specific types of mortgages to be securities and / or control volume of MBS origination)

	Agree Strongly	Agree	Neutral	Disagree	Disagree Strongly	Total
Asset Mgt Company	0	0	1	1	0	2
Brokerage Firm	0	0	0	2	0	2
Commercial Bank	0	5	8	4	0	17
Corporate / Institutional Investment	0	0	1	1	0	2
Investment Bank	0	2	6	1	0	9
Mutual Fund / Insurance Co	0	0	1	0	0	1
Total	0	7	17	9	0	33
Percentage	*0%*	*21%*	*52%*	*27%*	*0%*	*100%*
Average Score : 3.06						

4. Development of the secondary mortgage market will make more funds available to property market and drive up property prices.

	Agree Strongly	Agree	Neutral	Disagree	Disagree Strongly	Total
Asset Mgt Company	0	1	1	0	0	2
Brokerage Firm	0	0	0	1	1	2
Commercial Bank	2	8	5	2	0	17
Corporate / Institutional Investment	0	2	0	0	0	2
Investment Bank	1	3	0	5	0	9
Mutual Fund / Insurance Co	0	0	0	1	0	1
Total	3	14	6	9	1	33
Percentage	*9%*	*42%*	*18%*	*27%*	*3%*	*100%*
Average Score : 2.73						

5. Development of the secondary mortgage market will channel long term funds into the mortgage market, eliminating some less healthy forms of mortgage funding by real estate developers.

	Agree Strongly	Agree	Neutral	Disagree	Disagree Strongly	Total
Asset Mgt Company	0	2	0	0	0	2
Brokerage Firm	0	2	0	0	0	2
Commercial Bank	0	5	6	5	1	17
Corporate / Institutional Investment	0	2	0	0	0	2
Investment Bank	0	7	2	0	0	9
Mutual Fund / Insurance Co	0	1	0	0	0	1
Total	0	19	8	5	1	33
Percentage	*0%*	*58%*	*24%*	*15%*	*3%*	*100%*
Average Score : 2.64						

6. Mortgage securitization can reduce the concentration risk of banks by reducing the proportion of property loans in the loan book.

	Agree Strongly	Agree	Neutral	Disagree	Disagree Strongly	Total
Asset Mgt Company	0	0	2	0	0	2
Brokerage Firm	1	1	0	0	0	2
Commercial Bank	4	8	3	2	0	17
Corporate / Institutional Investment	1	1	0	0	0	2
Investment Bank	2	3	3	1	0	9
Mutual Fund / Insurance Co	0	0	1	0	0	1
Total	8	13	9	3	0	33
Percentage	*24%*	*39%*	*27%*	*9%*	*0%*	*100%*
Average Score : 2.21						

7. Mortgage securitization give an incentive for banks to over-expand their loan book in the expectation of being able to securitise, thus reducing the quality of mortgages.

	Agree Strongly	Agree	Neutral	Disagree	Disagree Strongly	Total
Asset Mgt Company	0	0	2	0	0	2
Brokerage Firm	0	0	2	0	0	2
Commercial Bank	1	5	7	4	0	17
Corporate / Institutional Investment	0	0	2	0	0	2
Investment Bank	1	6	0	2	0	9
Mutual Fund / Insurance Co	0	0	0	1	0	1
Total	2	11	13	7	0	33
Percentage	*6%*	*33%*	*39%*	*21%*	*0%*	*100%*
Average Score : 2.76						

8. Mortgage securitization will weaken the banks' role by encouraging disintermediation.

	Agree Strongly	Agree	Neutral	Disagree	Disagree Strongly	Total
Asset Mgt Company	0	0	1	1	0	2
Brokerage Firm	1	1	0	0	0	2
Commercial Bank	0	4	7	5	1	17
Corporate / Institutional Investment	0	0	2	0	0	2
Investment Bank	0	2	2	3	2	9
Mutual Fund / Insurance Co	0	0	0	0	1	1
Total	1	7	12	9	4	33
Percentage	*3%*	*21%*	*36%*	*27%*	*12%*	*100%*
Average Score : 3.24						

9. Banks consider mortgage-related lending as their core activity have no desire to sell their mortgage loans at present.

	Agree Strongly	Agree	Neutral	Disagree	Disagree Strongly	Total
Asset Mgt Company	0	0	1	1	0	2
Brokerage Firm	0	2	0	0	0	2
Commercial Bank	0	3	3	10	1	17
Corporate / Institutional Investment	0	0	0	2	0	2
Investment Bank	0	3	3	3	0	9
Mutual Fund / Insurance Co	0	0	0	1	0	1
Total	0	8	7	17	1	33
Percentage	*0%*	*24%*	*21%*	*52%*	*3%*	*100%*
Average Score : 3.33						

	Agree Strongly	Agree	Neutral	Disagree	Disagree Strongly	Total
Mortgage Origination	0	1	1	7	0	9
Non-Mortgage Origination	0	7	6	10	1	24
Total	0	8	7	17	1	33
Percentage	*0%*	*24%*	*21%*	*52%*	*3%*	*100%*
Average Score : 3.33						

10.Banks will not securitise their mortgages to reduce interest rate risks due to the high percentage of adjustable rate mortgages.

	Agree Strongly	Agree	Neutral	Disagree	Disagree Strongly	Total
Asset Mgt Company	1	1	0	0	0	2
Brokerage Firm	0	0	0	2	0	2
Commercial Bank	1	1	7	8	0	17
Corporate / Institutional Investment	0	0	0	2	0	2
Investment Bank	0	0	5	4	0	9
Mutual Fund / Insurance Co	0	0	0	1	0	1
Total	2	2	12	17	0	33
Percentage	*6%*	*6%*	*36%*	*52%*	*0%*	*100%*
Average Score : 3.33						

	Agree Strongly	Agree	Neutral	Disagree	Disagree Strongly	Total
Mortgage Origination	1	0	5	3	0	9
Non-Mortgage Origination	1	2	7	14	0	24
Total	2	2	12	17	0	33
Percentage	*6%*	*6%*	*36%*	*52%*	*0%*	*100%*
Average Score : 3.33						

11. Banks have adequate capital and have no need to sell their mortgage loans to raise capital.

	Agree Strongly	Agree	Neutral	Disagree	Disagree Strongly	Total
Asset Mgt Company	0	2	0	0	0	2
Brokerage Firm	0	2	0	0	0	2
Commercial Bank	0	1	5	11	0	17
Corporate / Institutional Investment	0	0	1	1	0	2
Investment Bank	0	2	3	3	1	9
Mutual Fund / Insurance Co	0	0	1	0	0	1
Total	0	7	10	15	1	33
Percentage	*0%*	*21%*	*30%*	*45%*	*3%*	*100%*
Average Score : 3.30						

12. Institutional investors will welcome MBS to be valuable long term assets.

	Agree Strongly	Agree	Neutral	Disagree	Disagree Strongly	Total
Asset Mgt Company	0	1	1	0	0	2
Brokerage Firm	0	2	0	0	0	2
Commercial Bank	1	9	6	1	0	17
Corporate / Institutional Investment	0	0	2	0	0	2
Investment Bank	2	6	1	0	0	9
Mutual Fund / Insurance Co	0	1	0	0	0	1
Total	3	19	10	1	0	33
Percentage	*9%*	*58%*	*30%*	*3%*	*0%*	*100%*
Average Score : 2.27						

13. Institutional investors will actively participate in the secondary mortgage market.

	Agree Strongly	Agree	Neutral	Disagree	Disagree Strongly	Total
Asset Mgt Company	0	0	2	0	0	2
Brokerage Firm	0	0	1	1	0	2
Commercial Bank	1	6	8	2	0	17
Corporate / Institutional Investment	0	0	2	0	0	2
Investment Bank	0	4	5	0	0	9
Mutual Fund / Insurance Co	0	0	1	0	0	1
Total	1	10	19	3	0	33
Percentage	*3%*	*30%*	*58%*	*9%*	*0%*	*100%*
Average Score : 2.73						

14. HKMA is going in the right direction by developing the secondary mortgage market in Hong Kong

	Agree Strongly	Agree	Neutral	Disagree	Disagree Strongly	Total
Asset Mgt Company	0	2	0	0	0	2
Brokerage Firm	0	1	1	0	0	2
Commercial Bank	2	8	6	1	0	17
Corporate / Institutional Investment	0	0	0	1	1	2
Investment Bank	0	2	6	1	0	9
Mutual Fund / Insurance Co	0	1	0	0	0	1
Total	2	14	13	3	1	33
Percentage	*6%*	*42%*	*39%*	*9%*	*3%*	*100%*
Average Score : 2.61						

15.The future prospect of MBS in Hong Kong will be very good

	Agree Strongly	Agree	Neutral	Disagree	Disagree Strongly	Total
Asset Mgt Company	0	2	0	0	0	2
Brokerage Firm	0	2	0	0	0	2
Commercial Bank	1	8	7	1	0	17
Corporate / Institutional Investment	0	0	1	1	0	2
Investment Bank	0	3	3	3	0	9
Mutual Fund / Insurance Co	0	1	0	0	0	1
Total	1	16	11	5	0	33
Percentage	*3%*	*48%*	*33%*	*15%*	*0%*	*100%*
Average Score : 2.61						

Section III

Section III collects information about demographics of the respondent and his / her company

1. What is the nature of the main business of your company ?

	Total
Asset Mgt Company	2
Brokerage Firm	2
Commercial Bank	17
Corporate / Institutional Investment	2
Investment Bank	9
Mutual Fund / Insurance Co	1
Total	33

2. Does your firm participate in mortgage origination to end customers ?

	Yes	No	Total
Asset Mgt Company	0	2	2
Brokerage Firm	0	2	2
Commercial Bank	8	9	17
Corporate / Institutional Investment	0	2	2
Investment Bank	1	8	9
Mutual Fund / Insurance Co	0	1	1
Participate in Mortgage Origination	9	24	33

3. What is the number of employees of your firm in Hong Kong ?

Number of employees in Hong Kong	Number of Companies
0 - 100	5
100 - 500	19
1000 or above	5
500 - 1000	4
Total	33

4. What is the total corporate asset of your firm in Hong Kong ?

	Less than US$500M	US$500M - US$1B	US$1B - US$2B	US$2B - US$5B	Over US$5B	Total
Asset Mgt Company	2	0	0	0	0	2
Brokerage Firm	2	0	0	0	0	2
Commercial Bank	3	4	2	4	4	17
Corporate / Institutional Investment	0	0	2	0	0	2
Investment Bank	1	3	2	1	2	9
Mutual Fund / Insurance Co	0	0	0	1	0	1
Total	8	7	6	6	6	33

5. What is the percentage of foreign income (generated outside Hong Kong) for your company ?

	Less than 10%	10% - 20%	20% - 30%	30% - 40%	40% - 50%	Over 50%	Number of firms
Asset Mgt Company	0	0	2	0	0	0	2
Brokerage Firm	0	0	0	0	2	0	2
Commercial Bank	8	4	1	1	2	1	17
Corporate / Institutional Investment	0	0	0	0	0	2	2
Investment Bank	2	0	2	2	0	3	9
Mutual Fund / Insurance Co	0	0	0	1	0	0	1
Grand Total	10	4	5	4	4	6	33

6. How long has your company been doing business in Hong Kong ?

	Less than 1 year	1 - 3 years	4 - 5 years	6 - 10 years	Over 10 years	Total
Asset Mgt Company	0	0	2	0	0	2
Brokerage Firm	0	0	2	0	0	2
Commercial Bank	0	2	1	3	11	17
Corporate / Institutional Investment	0	0	2	0	0	2
Investment Bank	0	1	0	1	7	9
Mutual Fund / Insurance Co	0	0	0	0	1	1
Total	0	3	7	4	19	33

7. Which is your job title / position ?

Job Title	Number of respondents
Chairman, President, Managing Director	0
Director, Assistant Director	2
General Manager	1
Executive Vice President, Senior Vice President	0
Vice President	0
Manager	12
Professional	10
Others	8
Total	33

8. Which of the following best describe your job area ?

Job Area	Number of respondents
General Management	0
Fund / Portfolio Management	6
Securities Trading	3
Sales / Marketing	5
Corporate Finance	5
Treasury	8
Merchant Banking	1
Others	5
Total	33